ISSUE III, REV. 17, 7/19/2019

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1700 South 12th Ave. Plant Facility
Marshalltown, Iowa 50158

With additional locations controlled by the above at
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205 South Center St. Administrative Office
1704 South 12th Ave. R.A. Engel Technical Center
Marshalltown, Iowa 50158

No. 15 Xing Wang Road
Wuqing Development Area
Tianjin 301700, P.R. China

ASME SECTION III, DIVISION 1

NUCLEAR QUALITY ASSURANCE MANUAL

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Manual No. WEB COPY

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General Company Policy and Authority Statement

This Nuclear Quality Assurance Manual describes the "Quality Assurance Program" to be used for Construction of Code items as described in Manual Section 2 Scope, and as a Material Organization supplying ferrous and non-ferrous material to the nuclear power industry in accordance with ASME Section III, Division 1. It is also the program to be used for the supply of safety-related items to the requirements of Appendix B to 10 CFR Part 50.

This Manual shall serve as a working document for activities controlled by 1700 S 12th Ave Marshalltown, IA 50158. Management insists that it be followed so that all applicable ASME Section III, Division 1, design and customer requirements are met.

The Manager, Quality shall establish quality standards and assure conformance with ASME Section III, Division 1, Company policy, and contractual requirements. It must be understood that quality is achieved and maintained by those assigned responsibility for performing work, and Quality achievement is verified by those not directly responsible for performing the work.

The Manager, Quality is responsible for assuring that all phases of the Nuclear Quality Assurance Program are implemented properly and for imparting a strong nuclear safety culture. He has the authority and organizational freedom to identify quality assurance problems, initiate action which results in solutions, which includes approval of revisions to this Nuclear Quality Assurance Manual, and to verify implementation of solutions to those problems. He may limit or control work when he deems necessary. The Manager, Quality cannot be overridden by other company divisions, departments, or managers.

The Director, Quality has direct access to me and in the event of an impasse between the Manager, Quality and other departments or managers, the Director, Quality will be the arbitrator and his decision shall satisfy the rules of the ASME Code and this Manual and be final and binding on all parties.

Kevin G. Meyer
President, Flow Controls

ISSUE III
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PREPARED Brian Seink 7/19/19
Quality Engineer Date

REVIEWED/APPROVED 7/19/19
Manager, Quality Date

ACCEPTED 19JUL19
A.N.I.S. Inspector Date

ISSUE III
REVISION HISTORY

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Changes to the current revision are described separately from this Manual in the Synopsis of Changes.

GLOSSARY

1. Listed below are definitions of abbreviations found in this Manual.

AIA	Authorized Inspection Agency
ANI	Authorized Nuclear Inspector
ANIS	Authorized Nuclear Inspector Supervisor
ANSI	American National Standards Institute
APR	Assembly Processing Requirements
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ATR	Assembly Test Report
BOM	Bill of Materials
COC	Certificate of Conformance
C of C	Certificate of Compliance
CMO	Certified Material Organization
CSP	Configurable Supplementary Processing
CMTR	Certified Material Test Report
DS	Drafting Standard
EDOCS	Electronic Documentation System
EM	Engineering Master
EP	Engineering Practice
ES	Engineering Standard
FFS	Fisher Finishing Specification
FGS	Fisher General Specification
FMS	Fisher Material Specification
FMP	Fisher Manufacturing Procedure
FTEP	Fisher Test and Evaluation Procedure
FWPS	Fisher Weld Procedure Specification
ITR	Inspection and Test Report
LBP	Local Business Partner
MPR	Manufacturing Processing Requirements
NASL	Nuclear Approved Suppliers List

NDE	Nondestructive Examination
NMDR	Nonconforming Material Disposition Report
NQAM	Nuclear Quality Assurance Manual
NV2	Nuclear Value Stream
PPR	Procurement Processing Requirements
PQR	Procedure Qualification Record
QCT	Quality Control Technician
QMO	Qualified Material Organization
QP&S	Quality Plans and Specifications
QSC	Quality System Certificate
RPE	Registered Professional Engineer
SDR	Specification Design Review
WMP	World Manufacturing Procedures
WPQ	Welder Performance Qualification
WOPQ	Welding Operator Performance Qualification
WPS	Welding Procedure Specification

2. Listed below are definitions of terms found in this Manual. *Terms found in the manual not listed below, are defined as specified in NCA-4120*

USE-AS-IS - A disposition assigned an item previously identified as nonconforming after reconciling design output documents with the item's as-built condition and verifying that applicable requirements of the Code have been met.

APPLICATION ENGINEER – An engineer whose responsibilities include Nuclear Quotations and Order Review activities.

APPROVE - Act of evaluation and positive endorsement of a document or activity. This includes an indication by signature, initials, stamp, or controlled electronic methods, and date on the document or on a record traceable to the document or activity. See **REVIEW**.

APPROVED SUPPLIER (non code) - A supplier that has been evaluated and approved to supply items and services for 10 CFR Part 50 Appendix B.

APPROVED SUPPLIER - A supplier that has been evaluated and approved by a Material Organization or Certificate Holder in accordance with the requirements of NCA-3800 to supply qualified source material for conversion to material, or provision of services, to the party performing the evaluation and approval.

ASSEMBLY PROCESSING REQUIREMENTS (APR) - A specification which is written for a particular project/order which lists specific assembly requirements to meet the Code and contractual requirements, and specifies the applicable Code Edition and Addenda.

ASSEMBLY WORK ORDER – The document pack that accompanies the product through the assembly, test, packaging, and shipment processes and includes the pick-list, drawing, and processing documents as required.

AUDIT - a documented evaluation performed to verify, by examination of objective evidence, that those selected elements of a previously approved quality program have been developed, documented, and implemented in accordance with specified requirements. An audit does not include surveillance or inspection for the purpose of process control, or acceptance of material or items.

AUTHORIZED INSPECTION AGENCY - An Authorized Inspection Agency is accredited by the American Society of Mechanical Engineers (ASME) in accordance with the provisions set forth in ASME QAI-1, Qualification of Authorized Inspection.

AUTHORIZED NUCLEAR INSPECTOR SUPERVISOR (ANIS) - The Authorized Inspection Agency shall employ an Authorized Nuclear Inspection Supervisor qualified in accordance with ASME QAI-1, Qualification for Authorized Inspection, to supervise the Inspectors.

AUTHORIZED NUCLEAR INSPECTOR (ANI) - The Authorized Inspection Agency shall employ Authorized Nuclear Inspectors qualified in accordance with ASME QAI-1, Qualification for Authorized Inspection, to perform inspections required by the Code.

BILL OF MATERIAL (BOM) - A list of the items and the quantities needed to manufacture product.

CERTIFICATE HOLDER - An organization holding a Certificate of Authorization. This does not include the holder of a Quality System Certificate or Owner's Certificate.

CERTIFICATE OF CONFORMANCE - A document signed or otherwise authenticated by an authorized individual certifying the degree to which items or services meet specified requirements.

CERTIFICATE OF COMPLIANCE - A written statement attesting that the materials are in accordance with specified requirements.

CERTIFYING ENGINEER *– An engineer or technically competent professional qualified in accordance with the requirements of ASME Section III Mandatory Appendix XXIII.*

CERTIFICATION MARK – An ASME symbol identifying a product as meeting Code requirements.

CERTIFICATION MARK DESIGNATOR – A letter such as N, and NPT to indicate what Certificate of Authorization was satisfied during fabrication.

CERTIFICATION MARK STAMP – A metallic stamp issued by ASME for use in impressing the Certification Mark.

CERTIFIED MATERIAL TEST REPORT (CMTR) - a document attesting that the material is in accordance with specified requirements, including the actual results of all required chemical analyses, tests, and examinations.

CODE - ASME Boiler and Pressure Vessel Code, Section III, Division 1, with addenda and referenced standards.

CODE PART - An item that is attached to or becomes a portion of a component or support before completion and stamping of the component or support. Code Parts have work performed on them requiring verification by an ANI.

CODE STAMP – ASME CODE SYMBOL STAMP or CERTIFICATION MARK.

COMMERCIAL GRADE SURVEY – A planned and documented activity performed by evaluation of objective evidence to determine the adequacy of a supplier's commercial quality program and its ability to control the identified critical characteristics as a method for acceptance of a commercial grade item as a basic component (Not for ASME Code items.)

COMPANY - Fisher Controls International LLC, Marshalltown, IA

CONSTRUCTION - An all inclusive term including materials, design, fabrication, examination, testing, inspection and certification required in the manufacture and installation of items.

CORRECTIVE ACTION - Measures taken to rectify conditions adverse to quality, and where necessary, to preclude repetition. Significant conditions adverse to quality are addressed to preclude repetition.

CONFIGURABLE SUPPLEMENTARY PROCESSING (CSP) – A process to identify and communicate special customer and Code requirements such as fabrication, assembly, test, and packaging. The end result of which creates a Defined Part Number.

CSP-QR – Document containing supplier requirements.

CUSTOMER - The Owner or his designee.

CUSTOMER ORDER - An order for a Code item that is to be used on a particular order and is not stocked.

DATA REPORT - A document certifying that an item was constructed in accordance with Code Requirements.

DEFINED PART NUMBER – A part number that specifies unique processing requirements including sourcing restrictions that have been reviewed and approved by the Manager Quality.

DESIGN ENGINEER - An Engineer designated as having primary engineering design responsibility for new designs.

DESIGN REPORT - The design document that shows that the allowable limits stated in the Code are not exceeded for the loadings specified in the Design Specification.

DESIGN SPECIFICATION - A document prepared by the Owner or his designee, which provides a complete basis for construction in accordance with the Code. (Separate design specifications are not required for parts or appurtenances when they are included in the Design Specification for a component. However, the applicable data from the component Design Specification shall be

provided in sufficient documented detail to form the basis for fabrication in accordance with the Code.)

DIRECTOR, QUALITY AMERICAS *– Also known as Director Quality – Valve Division.*

ENGINEER - A Design Engineer, Product Engineer or Qualification Engineer.

ENGINEERING MASTERS (EM) - Unique sets of part/component modules which provide material and combination selections to establish individual product make-up. (This is a master parts list.)

FISHER SERIAL NUMBER - A unique number assigned to each serialized assembly manufactured by the Company. This number may be used for identification of Code Items and is traceable through permanent records to a specific item's description and included part numbers.

HEAT NUMBER - An identifying number permanently marked on Material by the material manufacturer to provide traceability to the chemical and/or physical properties of individual heats of material.

HOLD POINT - A designated stopping place during or following a specific activity at which inspection or examination is required before further work may be performed.

INDOCTRINATION – Includes general criteria, technical objectives, requirements of applicable codes and standards, regulatory commitments, procedures, and Nuclear Quality Assurance Manual requirements.

INFORMATION CENTER - The Technical Library which is responsible for ensuring that publications, such as design codes, standards, and specifications used in the design process are current and are available for use.

INSPECTOR - A qualified quality representative who performs inspection activities and may also be referred to as Quality Control Technician (QCT) or NV2 Inspector.

INSPECTION - Examination or measurement to verify whether an item or activity conforms to specified requirements.

INSPECTION GAGES - Gages used for the final acceptance inspection of parts.

INSTRUMENTATION - A person whose responsibilities include maintenance or calibration activities on instruments.

ITEM - A product constructed under a Certificate of Authorization or material.

ITEM NUMBER - A number used in conjunction with the Representative's Purchase Order Number. The Representative's Purchase Order and Item Numbers become the controlling number by which information within the Order Processing System is traced and monitored.

LOCAL BUSINESS PARTNER (LBP) - An independently owned company authorized to sell Fisher Controls' products and enter customer order data directly into the Company's system. May also be referred to as Representative.

MACHINE OPERATOR - An operator whose responsibilities include machining parts or items.

MANAGER QUALITY ENGINEERING - A Manager whose responsibilities include supervision of and performance of Quality Engineer activities.

MANAGER PRODUCTION - A Manager who reports to the Plant Manager and whose responsibilities include activities for one or more production areas. Responsibilities may include materials, machining, assembly, manufacturing, customer service or operations.

MANAGER QUALITY – May also be referred to as QA Manager or Quality Manager.

MANUAL – Nuclear Quality Assurance Manual (NQAM)

MANUAL VALIDATION REPORT - Internal document that fully describes hardware to be built.

MANUFACTURING PROCESSING REQUIREMENTS (MPR) - A specification which is written for a particular project/order which lists specific manufacturing requirements to meet the Code and contractual requirements. It also specifies the applicable Code Edition and Addenda.

MATERIAL ORGANIZATION - An organization certified by holding a Quality System Certificate (QSC) issued by the Society, or qualified by a Certified Material Organization (CMO), or a Certificate Holder in accordance with the requirements of section III, NCA-3800.

MATERIALS - Materials manufactured to an SA, SB, or SFA specification or any other material specification as permitted by the Code and which are manufactured, identified, and certified in accordance with the requirements of Section III.

MATERIALS ENGINEERING MANAGER – A Manager whose responsibilities include supervision of Division Weld Engineer activities.

MEASURING AND TEST EQUIPMENT - Devices or systems used to calibrate, measure, gage, test, or inspect in order to acquire data to verify conformance to specified requirements.

NUCLEAR APPROVED SUPPLIERS LIST (NASL) - A list of suppliers that have been approved by the Manager Quality to supply Items and services in accordance with the Code and 10 CFR Part 50 Appendix B.

NONCONFORMING AREA - An area where Code Items which do not conform to the Code, the engineering drawing, or specifications, will, when feasible, be held awaiting appropriate disposition.

NONCONFORMING MATERIAL DISPOSITION REPORT – A document showing the systematic change from the normal build cycle. The steps necessary to return a part to functionality or full compliance.

NONCONFORMITIES - Deficiencies in characteristic, documentation, or procedure which renders the item or activity unacceptable or indeterminate. Examples of nonconformance include: physical defects, test failures, incorrect or inadequate documentation, or deviation from the prescribed processing, inspection or test procedures.

NQA-1 - Abbreviation for "Quality Assurance Program Requirements for Nuclear Facilities," ASME NQA-1 Code accepted edition.

NUCLEAR BUSINESS UNIT - A work team established to process orders for Items. The responsibilities of this team are: quotation, project management, engineering qualification functions, application engineering, order entry, drafting, and product engineering.

NUCLEAR BUYER - A Buyer whose responsibilities include activities for a nuclear order.

NUCLEAR PROJECT MANAGER – The Nuclear Project Manager reports to the *NA PMO Manager, Nuclear* Project Management.

NUCLEAR SAFETY RELATED – Those items, which perform a safety-related function as described in ES 248.

NV2 ASSEMBLER/TESTER – A person who reports to the Supervisor NV2 and assembles and tests product to the requirements of the requisition pack.

NV2 INSPECTOR - A person whose responsibilities include activities of a Quality Control Technician in the Nuclear Value Stream.

NUCLEAR STOREROOM - Designated area in the plant where approved nuclear stock material is stored awaiting processing or assembly.

ORDER ENTRY – Reports to the Sales Manager for non-project specific order entry activities, and to the Manager, NA Order Engineering for project specific order entry activities.

ORDER WRITE-UP - A reproducible form for translating customer order specifications into internal production specifications.

OWNER - The organization legally responsible for the construction and/or operation of a nuclear facility including but not limited to one who has applied for, or has been granted, a construction permit or operating license by the regulatory authority having lawful jurisdiction.

PAINTER – Person who performs a painting operation.

PIECE SERIAL NUMBER - A unique number assigned as an identification number to items for traceability purposes. Items or valve parts that are batch controlled may carry the same piece serial number.

PRESIDENT, FLOW CONTROLS– The President of Fisher Controls International LLC.

PRESIDENT, FISHER NORTH AMERICA – Reports to the President, Flow Controls.

PRINTED COPY - A copy of a document printed on paper.

PROCUREMENT PROCESSING REQUIREMENTS (PPR) - A specification which is written for a particular project/order which lists specific procurement requirements to meet the Code and contractual requirements. It also specifies the applicable Code Edition and Addenda.

PRODUCT - An all-inclusive term used to designate any of the following: material, qualified source material, valve part, subassembly, valve or appurtenance.

PRODUCT ENGINEER - An Engineer designated as having primary engineering design responsibility for an existing product.

PURCHASED PARTS – Finished material which is received directly from a Material Organization or Certificate Holder with Material Organization in their scope of supply.

QA DOCS ANALYST – A person who is responsible to the Manager, Quality.

QUALIFICATION ENGINEER - An Engineer that performs Equipment Qualification activities.

QUALIFICATION ENGINEERING MANAGER - A Manager in the Nuclear Business Unit who reports to the *North America Nuclear Manager* and whose responsibilities include that of a qualification engineer.

QUALIFIED SOURCE MATERIAL – Metallic products produced by an approved supplier, Material Organization, or Certificate Holder in accordance with the requirements of NCA-3800 or the output of the qualification process requirements of NCA-4255.5.

QUALITY ASSURANCE - For purposes of this Manual, Quality Assurance shall comprise of all those planned and systematic actions deemed necessary to provide adequate confidence that all Code Items are designed and constructed in accordance with the rules of the Code, Fisher Controls' design requirements, and the Design Specification. These actions shall include testing and examination of items to verify compliance with established acceptance standards; as well as documentation which provides objective evidence that the specified quality control activities were conducted.

QUALITY ASSURANCE RECORDS – A completed document that furnishes evidence of the quality of items and/or activities affecting quality.

QUALITY ASSURANCE RECORDS FILE - Various access controlled files located in different areas (i.e. Quality Assurance Documentation, Information Center, etc.) under environmentally controlled (i.e. temperature, humidity, fire protection) conditions; utilized for the storage of copies of both "Lifetime" and "Non-permanent" Quality Assurance Records.

QUALITY ASSURANCE REPRESENTATIVE – Persons reporting to or performing functions for Manager, Quality; Quality Control Manager; Manager Quality Engineering.

QUALITY CONTROL TECHNICIAN – Includes Level I and Level II MT/PT

QUALITY ENGINEER – A representative of Quality Engineering.

QUALITY MANAGEMENT SYSTEM MANUAL (QMSM) - describes non-Code processes that are performed at Fisher Controls International LLC, Marshalltown Operations, to demonstrate compliance with the ISO 9001:2015 standard.

QUALITY PLANS – Documents that identify special customer or code requirements used in the manufacture of orders. They are comprised of: ASSEMBLY TEST REPORTS (ATR), ASSEMBLY PROCESSING REQUIREMENTS (APR), INSPECTION TEST REPORTS (ITR), MANUFACTURING PROCESSING REQUIREMENTS (MPR), PROCUREMENT PROCESSING REQUIREMENTS (PPR), and the sequence of manufacturing operations printed on the Work Order.

RAW MATERIAL / ROUGH STOCK – Material, qualified source material or unqualified source material that is not a semi-finished or finished valve part.

REGISTERED PROFESSIONAL ENGINEER (RPE) - A Certifying Engineer responsible for Certifying activities.

REPRESENTATIVE - An independently owned company authorized to sell Fisher Controls' products and enter customer order data directly into the Company's system. May also be referred to as Local Business Partner (LBP).

REPAIR – See REWORK.

REVIEW - The act of evaluation and positive endorsement of a document or activity which is indicated by signature, initials, stamp, or controlled electronic methods, and date on the document or on a record traceable to the document or activity. See **APPROVE**.

REWORK – The process of physically restoring a nonconformance to a condition such that the Item complies with Fisher Controls' design and the Code requirements.

SHOP PACK - The document pack that accompanies items being processed in the machine shop and includes the Work Order, Engineering Drawing, Inspection and Test Report (for Code items), and operation sheets.

SIGNIFICANT CONDITION ADVERSE TO QUALITY – Conditions adverse to quality that includes failures, malfunctions, deficiencies, defect items and nonconformances, if uncorrected, could have a serious effect on safety or operability.

SNT-TC-1A - The American Society for Nondestructive Testing Recommended Practice, Latest Code Accepted Edition – this is mandatory for Code activities.

SOURCE MATERIAL - Metallic products used by a Material Organization or Certificate Holder in a product form conversion process in the manufacture of material or in a qualification process based on test and examination to the requirements of the material specification. Source material may be qualified or unqualified.

SUPERVISOR (Manufacturing) – Supervisor whose responsibilities include the activities of Material Handler, Stock Selector, Instrumentation, Name Plate Stamper, Packager, Electrician, and Machine Operator in the Manufacturing operation.

SUPERVISOR (NV2) – Supervisor whose responsibilities include the activities of NV2 Assembler / Tester.

SUPERVISOR (QC) – Supervisor whose responsibilities include the activities of QC Technician or NV2 Inspector.

SUPERVISOR (Welding) – Supervisor whose responsibilities include the activities of Welder, Weld Operator or Furnace Operator.

SUPPLIER - An individual or organization that furnishes materials or services in accordance with procurement documents.

SURVEY (code) - A documented evaluation of an organization's ability to perform Code activities; as verified by a determination of the adequacy of the organization's Quality Program and by a review of the implementation of that Program at the location of the work.

TESTING - An element of verification for determining the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions.

UNQUALIFIED SOURCE MATERIAL - Source material not produced by a Certificate Holder, Material Organization, or approved supplier in accordance with the requirements of Section III, NCA-3800.

VALVE PART – A piece that is attached to or becomes a portion of a valve.

VP ENGINEERED PRODUCTS BUSINESS UNIT - VP reporting to the Executive VP, Fisher Business Units. *Responsibilities include the Nuclear Business Unit and Drafting.*

VP OPERATIONS AMERICAS – VP reporting to President, North America with operations responsibilities at the plant sites.

WELDING ENGINEER - A person who is responsible to the Manager Welding.

WELDING MATERIAL QUALIFICATION – Testing performed on a heat of weld material as required by NB-/NC-/ND-2430 including the maximum post weld heat treat time not to be exceeded by production welds.

WITNESS POINT - A customer designated stopping place preceding a specific activity at which inspection or examination of the activity is accomplished. Work may proceed beyond this point after notification to the designator.

WORK ORDER - A Work Order is a document, developed from part number information, which establishes a specific manufacturing and inspection sequence, or routing, for each part and/or sub-assembly.

QUALITY ASSURANCE PROGRAM

2.0 **SCOPE:** To outline the Quality Assurance responsibilities and requirements which assure identification of, and compliance with, requirements of Code items, nuclear safety-related items, as described in FMP 2Q22, the customer; and other pertinent codes, standards, requirements and practices. This program applies to the locations referenced on the *Cover* Page.

This *Nuclear* Quality Assurance Manual describes the controlled manufacturing and quality assurance program established by Fisher Controls International LLC management to implement the program.

Fisher Controls International LLC will enter into contracts for the construction of valves valve parts, and appurtenances; the supply of material and valve replacement parts as defined in the following program scopes:

N: Class 1, 2 & 3 construction of valves, including selection and control of materials, Design Control, manufacture (i.e. fabrication, examination, inspection, certification of the Code Data Report and ASME Code and NB Stamping of Rotary and Sliding Stem Globe Valves, where Fisher Controls is responsible for certification in accordance with the owner's or owner's designees Certified Design Specification.)

NPT: Class 1, 2 & 3 fabrication *and Class 1, 2 & 3 fabrication* with design responsibility *of* appurtenances.

All Code activities described in this program are implemented and controlled from 1700 South 12th Avenue, Marshalltown, Iowa 50158 with management of Policy and Authority and internal audit activities at 205 South Center Street, Marshalltown, Iowa 50158. Order Entry, creating quality plans, and control of electronic records activities at 1704 South 12th Avenue, Marshalltown, Iowa 50158. Design Control, Qualification of WPS's and Certification of PQR's and Document Control at 301 South 1st Avenue, Marshalltown, Iowa 50158 with additional Engineering functions at No. 15 Xing Wang Road, Wuqing Development Area, Tianjin 301700, P.R. China. Shipping and Receiving at 1311 East Olive Street, Marshalltown, Iowa 50158 and 1309 East Olive Street, Marshalltown, Iowa 50158, which are alternate entries to 1700 S. 12th Ave Marshalltown, IA 50158.

The N/NPT activities includes:

Preparation and certification of the design report in compliance with the Owner's or owner's designees Certified Design Specification.

Qualification of material organizations by initial capability survey, triennial audits of the entire program supplemented by performance assessments including a review of conditions adverse to quality and periodic testing, and the preparation of certified material test reports, certificates of compliance and certificates of conformance.

Approval and control of Approved Suppliers of qualified and unqualified source material, and subcontracted services by initial capability survey and triennial audits of the entire program supplemented by the performance of annual performance assessments including a documented review of the qualified material organization's and Approved Suppliers of Qualified Source material, suppliers of unqualified source material by heat and lot and Subcontracted Services history of conditions adverse to quality and a

documented review of periodic testing of purchase material performed since the last assessment or audit.

Evaluation and selection of N Type Certificate Holders or Quality System Certificate Holders for Code activities based on the ASME Certificate and Quality Assurance or System Program scope.

Controls for the registration of Code Data Reports for valves, Code parts, or appurtenances constructed by Fisher Controls with the National Board of Boiler and Pressure Vessel Inspectors.

Further qualification of qualified source material as material by additional examination or testing, and Subcontracting of the metallurgical or chemical testing activities.

Performance of product form conversion, conversion from one material specification to another and activities that affect mechanical properties.

Subcontracting machining services.

Further qualification of qualified source material as material by additional examination or testing, and qualification of unqualified source material based on qualification on per piece controls.

Testing, examination Repair or treatments required by the material specification or the specific applicable material requirements of the Code of Construction and certification of the results of such tests, examinations, repairs or treatments.

Receipt, identification, verification, handling, storage, and shipment of items from Fisher Controls to other parties.

Control of traceability of material and source material under the control of Fisher Controls.

The qualification of unqualified source material by heat and lot from supplier of unqualified source material using the supplier's identification and traceability procedure verified on-site by Fisher Controls.

Performance of fabrication and manufacturing operations for Code activities affecting quality.

Subcontracting of NDE Level III services and NDE services to Approved Suppliers of NDE Services Approved and Controlled by Fisher Controls.

The procurement of calibration services from ISO 17025 accredited approved suppliers of calibration services.

The N/NPT activities **do not** include:

The supply of replacement Material under the ASME Certificate N-1929 in accordance the provisions of NCA-3561(d). Prior to the removal of this exclusion Fisher Controls must notify ASME and their AIA of record. Material shall, however, be supplied under ASME Certificate NPT-1930.

Preparation of Design Specifications for NPS 4 and smaller valves for the construction by Fisher Controls and the reconciliation by the Owner or the Owner's designee prior to installation.

Subcontracting of design activities for Code applications.

Controlling Approved Suppliers of qualified and unqualified source material, and subcontracted services by having the approved supplier comply with program elements identified in the Fisher Controls' quality assurance program.

Subcontracting of individuals for their services as welders and welding operators for welding fabrication activities at 1700 South 12th Ave, Marshalltown, Iowa 50158.

Subcontracting of welding including tack welding for the purpose of alignment or support except to holders of NPT Certificates of Authorization with the required program scope.

The shipment of material from Material Organizations or Certificate Holders to parties other than Fisher Controls, nor reproduction of Radiographs.

Bending or forming.

As a *Supplier of Material* supplying ferrous and nonferrous bars, threaded fasteners, castings, forgings, plates, seamless fittings, flanges, fittings welded without filler metal, seamless tubular products, tubular products welded without filler metal.

Material *Supply* activities include:

Qualification of material organizations and Approval and control of suppliers of qualified source material, and subcontracted services by initial capability survey, triennial audits of the entire program, and continued qualification of material organizations by the performance of annual performance assessments including a documented review of the qualified material organization's history of conditions adverse to quality and a documented review of periodic testing of materials purchased and controlled or services performed since the last assessment or audit.

Evaluation and selection of N Type Certificate Holders or Quality System Certificate Holders for Code activities based on the ASME Certificate and Quality Assurance or Quality System Program scope.

Further qualification of qualified source material as material by additional examination or testing, and subcontracting of the metallurgical or chemical testing activities.

The procurement of calibration services from ISO 17025 accredited approved suppliers of calibration services.

Further qualification of qualified source material as material by additional examination or testing.

Subcontracting of the metallurgical or chemical testing activities.

Testing and examination required by the material specification or the specific applicable material requirements of the Code of Construction and certification of the results of such tests and examinations.

Receipt inspection, identification, verification, handling, storage.

Material *Supply* activities **do not** include:

The continued control of approved suppliers of qualified source material, and subcontracted services by having the approved supplier comply with identified elements of the quality assurance program.

Manufacturing operations affecting the mechanical properties, conversion from one product form into another product form including changes to the applicable dimensional requirements, and certification from one material specification to another material specification,

Manufacturing of material or source material.

Operations performed during the melting and heat analysis Repair or treatments required by the material specification or the specific applicable material requirements of the Code of Construction and certification of the results of such repairs or treatments.

Control of shipments of material or qualified source material from material organizations or Certificate Holders to parties other than Fisher Controls.

2.1 RESPONSIBILITIES:

2.1.1 The Manager Quality reports functionally to the Director, Quality *Americas* and is responsible for the administration, execution, and control of the Nuclear Quality Assurance Program (hereafter referred to as the Program). In the event of an impasse between himself/herself and other departments or managers, he/she has the responsibility to present the issue to the Director, Quality *Americas*, as described in the GENERAL COMPANY POLICY AND AUTHORITY STATEMENT. He/she shall also report regularly on the effectiveness of the Program to appropriate levels of management using Internal Audit Results and monthly reports.

The Manager Quality is responsible for providing the necessary Quality Assurance personnel and ensuring that they are indoctrinated and trained utilizing the necessary procedures and equipment. The Manager Quality is responsible to assure personnel performing audit, calibration, and material disposition activities are properly trained and qualified. Qualified personnel will be maintained on a list by the Manager Quality. When performing these activities the qualified personnel report to the Manager Quality. The Manager Quality is also responsible for establishing and providing the necessary inspection and testing services to assure compliance with the Code and other contractual requirements.

The Manager Quality may change the manual issue number at his/her discretion. The Issue number will be increased by 1, all page revision numbers will revert to 0 and revision indicators removed.

The Manager Quality is also responsible for the preparation of this Nuclear Quality Assurance Manual (hereafter referred to as the Manual) and any revisions. He/she is responsible for the proper indoctrination and training of personnel in accordance with this Section.

2.1.2 The Manager Quality is responsible for verification of compliance with the Code and specification requirements. He/she shall coordinate records needed to verify Code compliance and is responsible for reviewing qualifications, procedures, and documentation with the Authorized Nuclear Inspector (ANI) and customer Inspectors. He/she is responsible for maintaining custody of the ASME Code and NB Stamps, and for the maintenance and continued upkeep of Quality Assurance records. He/she is responsible for providing direction for implementation of the Code and customer specifications. The Manager Quality is responsible for reviewing and certifying the Company's Certificates of Conformance and Data Reports. He/she is responsible for coordinating and conducting internal audits, external supplier audits, surveys (code), and Commercial Grade Surveys *(not code)*. Auditors and Lead Auditors shall be used to perform internal audits, supplier audits, surveys (code), and Commercial Grade Surveys as described in FMP 2J3.

2.1.3 The Manager Quality Engineering is responsible for initiating, reviewing, and implementing required supplier corrective action. He/she provides staff assistance to Quality Assurance.

2.1.4 The Manager, Quality is responsible for resolving supplier and Company documentation problems through the appropriate Application Engineer, Manager Manufacturing Engineering, Nuclear Project Manager, customers, suppliers, etc. He/she reviews purchasing and manufacturing documents, and coordinates items through manufacture, assembly, test, painting, packaging, and shipment.

2.1.5 The *Quality Control Manager* is responsible for ensuring the performance of the Quality Control Technicians (QCT)and NV2 Inspectors; all of whom perform inspection activities and may be referred to as Inspectors. He/she is responsible for supervising inspection personnel. He/she is responsible for obtaining inspection gauging and measuring and test equipment. He/she is responsible for training Inspectors in the proper use of this equipment.

2.1.6 NDE Level III is responsible for overseeing or conducting training and examination of NDE personnel. He/she is responsible for approving NDE tests administered to NDE personnel. The NDE Level III shall develop the procedures and oversee their application by NDE personnel.

2.1.7 QCT/NV2 Inspector or other Quality Assurance Representatives who are trained and qualified are authorized by the Manager Quality to perform physical inspection and its documentation as required by the Program. QCT may become qualified to perform Level I / Level II NDE Liquid Penetrant and Magnetic Particle Testing.

2.1.8 The Manager Welding is responsible for: welding procedure development and qualification, indexing, maintenance and filing of the Company welding procedures, and

generation of the welder *and welding operator* performance qualification records and log.

2.1.9 The Supervisors are responsible for supervising production and support (i.e. Welder, Packager, Electrician, etc.) personnel.

2.1.10 The Vice President Business Processes / Systems is responsible for maintaining the security of the information systems. He/she is responsible for establishing and determining adequacy of facility, procedure, and information system controls to provide this security.

2.1.11 Delegation / Designee

2.1.11.1 When the Manual places responsibility for an activity on an individual, he/she may delegate this activity to another trained and qualified person who has a direct reporting relationship, but he/she retains the responsibility.

2.1.11.2 When the Manual places responsibility for an activity on an individual, he/she may designate a trained and qualified individual to perform this activity, but he/she retains the responsibility. The designation shall be documented.

2.2 THE PROGRAM:

2.2.1 This Manual delineates responsibilities for the preparation and implementation of a plan of activities, which shall assure and control the quality of those items, parts, or components constructed by the Company or supplied under the scope of the Certificates of Authorization. The Program has been designed to comply with the requirements of the ASME Boiler and Pressure Vessel Code, Section III, Division 1, NQA-1, 10CFR Part 50 Appendix B, and other referenced and recognized Quality Program Standards, which may be required by contractual agreement. This Manual is supplemented by various Engineering Standards (ES), World Manufacturing Procedures (WMP), Fisher General Specifications (FGS), and Fisher Manufacturing Procedures (FMP) which outline the activities, responsibilities, and actions required by the Manual in more detail. Each applicable document is listed under "REFERENCE DOCUMENTS" at the end of each section of the Manual. If there are any conflicts between these implementing documents and the controls outlined in the Manual, the Manual shall govern. When conflicts are discovered, action(s) shall be taken to revise the implementing documents to comply with the program requirements as defined in this Manual.

Additional non-Code quality activities, not described in this manual, may be covered by the Quality Management System Manual (QMSM). If there is a conflict with a requirement between this Manual and QMSM, actions will be taken to comply with this Manual.

Commercial Grade Dedication (not for ASME Code items) will be controlled by FMP2K27. Upon successful completion of dedication activities, Safety related items will be handled in accordance with this manual for any further processing.

2.2.2 Documents used to control activities affecting quality shall be issued in accordance with the document control system outlined in Sections 5 and 6 of this Manual. These documents shall be prepared, reviewed, and approved as noted in the applicable sections of this Manual.

2.2.3 Acceptance standards for inspection activities shall be established by *Product* Engineer *and* Qualification Engineer. Cooperation between Quality Assurance and other applicable departments will be utilized during pre-planning operations to: determine the appropriate quality control techniques to be employed in various processes, the type and extent of inspection, and the inspection equipment which will be required.

2.2.4 Indoctrination and training of personnel performing activities affecting quality shall assure that suitable proficiency is achieved and maintained, and shall be implemented as outlined in this section of this Manual.

2.2.5 Audits of the Program shall be performed in accordance with the requirements of Section 19 of this Manual.

2.3 INSPECTION / INVESTIGATION:

Each item shall be inspected by a QCT or other Quality Assurance Representative who is trained and qualified, to assure that the item complies with specified requirements.

2.4 DOCUMENTATION:

The Manager Quality is responsible for ensuring that documentation and radiographs required in accordance with Section 18 of this Manual and the Design Specification are properly reviewed, verified, and filed in the Quality Assurance Records File (see Paragraph 18.4.1).

2.5 QUALITY ASSURANCE MANUAL:

2.5.1 The Manager Quality shall be responsible for the preparation, review, approval and distribution of the Manual. His/her approval shall appear in the Manual Index.

2.5.2 The Manual shall be distributed in the following manner:

a. The master control document shall be contained on EDOCS and on an external website that can be made available to selected customers wanting access in lieu of a paper controlled copy. Paper copies marked "CONTROLLED COPY" shall either be numbered or lettered and distributed to Company personnel and the Authorized Inspection Agency in accordance with a distribution list maintained by the Manager Quality. Distribution of the Manual, including revisions, shall be in accordance with Paragraph 2.5.3. Latest revisions to the Manual will be indicated by italicized (also blue when in color) that has been added and a vertical line in the margin when text has been revised and will indicate deleted text.

A cover letter outlining the nature of the revision shall be included with the distribution of Manual revisions and sent to selected customers with access to the external website that want notification of revisions.

b. Copies marked "UNCONTROLLED COPY" will be supplied for reference use only. These copies may be used for customer or regulatory agency audits and are not to be used by company personnel. Uncontrolled Manuals will be current at the time of issue but will not be updated with future revisions.

2.5.3 Each distribution of a controlled copy of the Manual, including revisions, shall be accompanied by an Acknowledgment of Receipt (Exhibit 1). The Acknowledgment of Receipt shall be signed and returned to the Manager Quality within 30 days of issue for controlled Manuals. This form will also be used to notify selected customers with access to the external website that a revision has been made. Return of the form is required for them to remain on the controlled distribution list.

If the Acknowledgment of Receipt is not received within the specified time limit, the Manager Quality will take the necessary action to obtain the acknowledgment within an additional 10 days. For manual holders not having responsibilities within the Quality Assurance Program, the Manager Quality will remove the manual holder from the controlled distribution, or re-take possession of the manual; whichever is appropriate.

2.5.4 This Manual and procedures shall be reviewed for compliance whenever a new Code Edition is published. The Manager Quality shall notify the Authorized Nuclear Inspector Supervisor (ANIS) in writing of such review and shall indicate that changes to the Manual and procedures are or are not necessary. Revisions necessitated by an Edition change shall be made and implemented within 6 months of the Edition issue date.

2.5.5 Changes to the Manual shall be submitted to the Authorized Inspection Agency's ANIS for acceptance. After review, the ANIS will indicate acceptance by signing and dating the *Index* page. Implementation of the revision shall occur within 45 days from the time of ANIS acceptance and approval. The ANI is advised of ANIS acceptance by issuance of a controlled copy of the Manual.

2.5.6 When any page of the Manual is revised, all pages of the Manual shall show the latest revision number.

2.6 GENERAL *INDOCTRINATION AND* TRAINING:

2.6.1 The Manager Quality is responsible for assuring that the applicable Managers/Supervisors are indoctrinated and trained in their specific responsibilities as outlined in the applicable sections of this Manual. Indoctrination material is developed by the Manager Quality. The Department Manager/Supervisor is responsible for presenting *and documenting* the indoctrination, but may request the assistance of the Manager, Quality.

2.6.1.1 *Indoctrination* Matrix
A*n Indoctrination* Matrix (Exhibit 13) shall be prepared listing those positions specifically identified within this Manual. The Matrix shall identify the specific areas of required training based upon responsibilities contained in the Manual. The Matrix will be *maintained* by the Manager Quality.

2.6.1.2 *Indoctrination* Description
A description of *indoctrination* sessions shall be approved by the Manager Quality to serve as a guide during the *indoctrination* sessions. *Indoctrination* may also include instruction in the use of applicable procedures, specifications, and/or standards.

2.6.2 *Department Managers/Supervisors are responsible for assuring that personnel performing activities affecting quality have been indoctrinated per 2.6.1. Personnel shall be trained to a level which will assure that suitable proficiency is achieved and maintained. Training*

requirements shall be established by the Department Managers/Supervisors and documented on the Qualification Records.

2.6.3 Individuals performing formal *indoctrination and* training as outlined in Paragraphs 2.6.1 and 2.6.2 are responsible for documenting the *activity* on the Indoctrination and/or Training form (Exhibit 77) or other suitable training form. *The Manager, Quality shall assure indoctrination and training records are maintained. A copy may be maintained in the files of the applicable Manager/Supervisor.*

2.7 SPECIFIC TRAINING:

2.7.1 Assembly and Assembly Test Personnel
Personnel performing assembly and assembly testing are qualified and certified in accordance with FMP 2J2.

This FMP shall establish education, training, evaluation of skills, a capability demonstration, maintenance of proficiency, requalification, and record requirements in accordance with the requirements of ASME NQA-1, Part 1, Requirement 2.

2.7.1.1 Qualification shall be verified by a capability demonstration. The NV2 Assembler/Tester shall, following the approved procedures, assemble the unit in the presence of the Supervisor (NV2) or Supervisor (Manufacturing). The Supervisor (NV2) or Supervisor (Manufacturing) will observe the assembly and note whether or not the proper procedure was followed on the procedure sheet. Upon completion of the assembly, the unit will be tested as outlined on the procedure sheet.

2.7.1.2 Upon successful completion of the assembly operation and testing, the Supervisor (NV2) or Supervisor (Manufacturing) will certify on the Assembly Qualification Form (Exhibit 83) that the NV2 Assembler/Tester has been qualified for the activity involved.

2.7.1.3 In the event the NV2 Assembler/Tester fails to qualify, the Supervisor (NV2) or Supervisor (Manufacturing) will have the NV2 Assembler/Tester re-trained and re-tested.

2.7.1.4 The Supervisor (NV2) or Supervisor (Manufacturing) shall retain copies of the qualification records for Assembly and Assembly Testing personnel.

2.7.1.5 The certification shall include the following information:

1. Name of individual being qualified
2. Activities qualified to perform
3. Basis for certification (capability demonstration)
4. Original certification date and date of expiration
5. Results of annual evaluation
6. Signature of the Supervisor certifying
7. Results of physical examinations (eye exam)
8. Employer's name

2.7.1.6 The job performance of Assembly and Assembly Test personnel shall be re-evaluated at periodic intervals, not to exceed three years. Re-evaluation shall be by evidence of continued satisfactory performance or re-determination of capabilities. If during this evaluation, or any other time, it is determined by Quality Assurance or the Supervisor (NV2) or Supervisor (Manufacturing) that the capabilities of an individual are not in accordance with qualification requirements specified for the job, that person shall be removed from that activity until such time as the required capability has been demonstrated. Periodic re-evaluations shall be documented by the Supervisor (NV2) or Supervisor (Manufacturing) who shall retain copies.

2.7.1.7 The Supervisor (NV2) or Supervisor (Manufacturing) shall establish an Assembly and Assembly Test personnel qualification list; which includes the name of the person, the activity for which the person is qualified, and the date in which the assembly activity was performed to maintain qualification. He/she is responsible for keeping the qualification list current and shall issue the latest copy to the Manager, Quality and Manager Value Stream.

2.7.1.8 Any person who has not performed assembly or testing activities in his qualified area for a period of one year shall be re-qualified and re-certified in the same manner as the original qualification.

2.7.2 Inspectors

The Supervisor (QC) is responsible for the qualification and certification of the Quality Control Technicians(QCT) and NV2 Inspectors who perform the inspection function and may be referred to as Inspectors. The qualification and certification shall be in accordance with FMP 2K19 prepared and approved per Section 5.

This FMP shall establish education, training, evaluation of skills, written examinations or a fully documented capability demonstration, maintenance of proficiency, re-qualification, and record requirements in accordance with the requirements of ASME NQA-1, Part 1, and Requirement 2.

2.7.2.1 As a prerequisite for Inspector qualification, a minimum of sixteen hours on-the-job training with an experienced Inspector is required. Additionally, a minimum of 1 week in training is required for these positions. Qualification shall be completed, as a minimum, by a capability demonstration. The Supervisor (QC) shall provide close supervision of the Inspector until his job performance is satisfactory. A final decision on the qualifications of the Inspector shall be made by the Supervisor (QC) before 60 days expire from the time of job initiation.

2.7.2.2 Inspectors will be qualified in accordance with Section 2.7.2.1 of this Manual. However, competency demonstrated in a machining job or similar inspection experience may be accepted in place of applicable training qualification requirements.

2.7.2.3 Records of personnel qualifications for Inspectors shall be established and maintained by the Supervisor (QC) and he/she shall certify each Inspector. The Personnel Record of Qualification (Exhibit 74) shall include the following information:

1. Name of Inspector being qualified
2. Activities qualified to perform

3. Basis for certification (capability demonstration)
4. Original certification date and date of expiration
5. Results of annual evaluation
6. Signature of the Supervisor/Manager certifying the Inspector
7. Results of physical examinations (eye exam)
8. Employer's name

2.7.2.4 The Supervisor (QC) shall establish and maintain an inspection list, which includes the Inspector's name, the inspection activity for which he/she is qualified and the month in which the inspection activity was performed to maintain qualification. He/she is responsible for keeping the inspection list current and shall issue the latest copy to the Quality Control Manager.

2.7.2.5 If the basis for certification is performance to a procedure, the revision of that procedure shall be considered to be the one in effect at the time of certification.

2.7.2.6 The capability of any Inspector who has not performed inspection activities in his/her qualified area for a period of one year shall be re-evaluated by re-determination of initial capability. If necessary, the Inspector shall be re-trained and re-certified.

2.7.2.7 Re-qualification, as required by FMP 2K19, shall be documented on the Personnel Record of Re-qualification (Exhibit 74).

2.7.3 Welders and Weld Operators

The Supervisor (Welding) shall assure qualification of Welders and Weld Operators in accordance with Section 10 of this Manual. He/she shall also be responsible for maintenance of such qualifications.

2.7.4 NDE Personnel

The NDE Level III shall be responsible for training and qualifying personnel performing Nondestructive Examination in accordance with Section 10 of the Manual.

2.7.5 Registered Professional Engineers and Qualification Engineers

The Executive VP Business Units is responsible for qualifying and certifying Registered Professional Engineers (RPE) *as Certifying Engineers (CE)* in accordance with the requirements of APPENDIX XXIII, the latest accepted Code edition, and Engineering Standard ES 172.

The RPE shall have four years of varied application experience; at least two of which have been in his/her specialty field(s). To qualify as certifier of the Design Report, the RPE shall be experienced in the design and analysis of the applicable items and in the application of Code requirements. Specifically, he/she shall be knowledgeable of the General Requirements (Subsection NCA) and have a working knowledge of the Code requirements for the preparation of an appropriate Design Report.

To determine the RPE's competency to perform certifying activities, the Executive VP Business Units or his/her designee, shall review the RPE's experience and education and shall personally interview the RPE to verify his/her knowledge of the ASME Code. The Executive VP Business Units or his/her designee shall document original certification. The RPE shall prepare and sign a Professional Engineer's qualification record at least once every two (2) years, which shall be based upon continued involvement and

competency. The RPE's signature indicates that he/she has completed the self-evaluation required by APPENDIX XXIII. The qualification record shall be reviewed and approved by the Executive VP Business Units or his/her designee. A record of continued involvement shall be included in the qualification records of the RPE.
The Qualification Engineering Manager shall assure Qualification Engineers are trained and demonstrate competence in accordance with Section 4 of this Manual.

2.7.6 Auditors and Lead Auditors

The Manager Quality is responsible for the qualification and certification of Auditors and Lead Auditors for supplier and internal audits. The qualification and certification shall be in accordance with FMP 2J3.

This FMP shall establish training, evaluation of communication skills, audit participation, examinations, and maintenance of proficiency, re-qualification, and record requirements in accordance with the requirements of ASME Section III.

2.7.6.1 The Manager Quality is responsible for assuring that Lead Auditors and Auditors have been trained in the following criteria:

1. Types of audits, surveys (code), and Commercial Grade Surveys
2. Audit, survey (code), or Commercial Grade Survey objectives
3. Administration of audits, surveys (code), and Commercial Grade Surveys
4. ASME Code requirements
5. Specific supplier audits, surveys (code), and Commercial Grade Surveys or internal audit guidelines
6. Use of audit, survey (code), and Commercial Grade Survey reports and checklists (NCA 3800 or NCA 4000, as applicable)
7. Audit, survey (code), and Commercial Grade Survey preparation and methodology.
8. This Nuclear Quality Assurance program.

As qualification for Lead Auditor, the candidate shall have participated in a minimum of five audits, surveys (code), or Commercial Grade Surveys, not to exceed three years prior to the date of qualification. At least one of these shall be a nuclear quality assurance survey (code) within the year prior to qualification. This training shall be under the leadership of a qualified Lead Auditor.

2.7.6.2 Records of personnel qualifications for Auditors and Lead Auditors performing audits, surveys (code), and Commercial Grade Surveys shall be established and maintained by the Manager Quality.

Each Lead Auditor shall be certified by the Manager Quality as being qualified to lead audits, surveys (code), and Commercial Grade Surveys. This certification shall, as a minimum, document the following:

1. Name of Lead Auditor being certified
2. Date of certification or re-certification and expiration
3. Basis of qualification (i.e. education, experience, communication skills, training, examination, etc.)
4. Signature of Manager Quality
5. Employer's name
6. Results of annual evaluation

7. Level of Certification
8. Physical examinations are not required

Records for each Lead Auditor shall be maintained and updated annually by the Manager Quality.

2.7.6.3 Lead Auditors shall maintain their certification through regular and active participation in the audit process. Based on annual assessment, the Manager Quality may extend the qualification, or require re-training or re-qualification, and shall document this on the certification.

2.7.6.4 Lead Auditors who fail to maintain their proficiency for a period of two years or more shall require re-qualification, per Section 2.7.6.1 of this Manual. Additionally, completion of a written examination and participation as an Auditor in at least one nuclear quality assurance audit, survey (code), or Commercial Grade Survey is required.

2.8 AUTHORIZED NUCLEAR INSPECTOR:

2.8.1 General

The Company shall have a contract with an Authorized Inspection Agency who shall accept the Program evidenced by signature on the Manual index. All inspections performed under this Program shall be by the Authorized Inspection Agency of record. The Inspection, as required by the Code, shall be by an ANI who is an employee of the Authorized Inspection Agency of record and who has been properly qualified in accordance with ASME QAI-1. The ANI shall not be an employee of the Company. ANI activities will be supervised by qualified ANIS employed by the Authorized Inspection Agency of record.

2.8.2 Quality Assurance Responsibility to the Authorized Inspection Agency

2.8.2.1 The Manager Quality is responsible for taking the necessary actions to ensure that the ANI has the freedom to perform the duties required of him/her by the Code. Further, he/she shall provide satisfactory working facilities.

2.8.2.2 The Manager Quality is responsible for arranging free access for the ANI to parts of the plant, involved in the processing of materials or Code Items. He/she is responsible for submitting Inspection and Test Reports (ITR) (Exhibit 15), Assembly Test Reports (ATR) (Exhibit 3), and revisions to the ANI for his/her review. The ANI is responsible for affixing of mandatory Inspection hold points prior to the start of processing.

In addition, the Manager Quality is responsible for making applicable records relative to the Code Item construction available to the ANI. This includes, but is not limited to, a Controlled copy of this Manual, copies of engineering drawings, procedures, purchase orders, owner's certified Design Specifications, Certified Material Test Reports (CMTR), qualification records of personnel and procedures, records of examination, inspections and tests, results of audits, surveys (code), Commercial Grade Surveys, and nonconformance reports. The ANI has the right at any time to require re-qualification of any procedure or operator when he/she has reason to believe Code requirements are not being met.

The Manager Quality shall require suppliers to allow the ANI free access to their facilities for the inspection of purchased Items and services.

This Manual shall be used as the basis for the ANI's monitoring of the Company's compliance with requirements of the Code. The Manager Quality shall provide the ANI with any assistance he/she may need to conduct his/her monitoring duties.

2.8.2.3 Nonconforming Material Disposition Reports (NMDR) (Exhibit 19) shall be made available to the ANI for his/her review and acceptance.

2.8.2.4 The Company is responsible for operating in accordance with the established Program and the Manager Quality is required to keep the ANI informed of any proposed modifications. Company personnel shall assist the ANIS in the performance of their audits including the audit of the Material *Supply* portion of this program.

2.9 SECURITY OF ELECTRONIC INFORMATION:

2.9.1 The Vice President Business Processes / Systems is responsible for ensuring that electronic *documents* ha*ve* appropriate controls to maintain security.

2.9.1.1 Information System Controls
Methods and devices shall be used to ensure the accuracy, validity, and propriety of the information system activities including:

A. System security monitoring software that will require a user ID and password that will protect against unauthorized use.
B. Multilevel hierarchy of authorization that shall limit access to data, programs, and information.
C. Computer information shall be backed up at defined intervals.

2.9.2 Personnel are responsible for not sharing their individual password, and for protecting against inadvertent sharing of individual passwords.

2.10 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

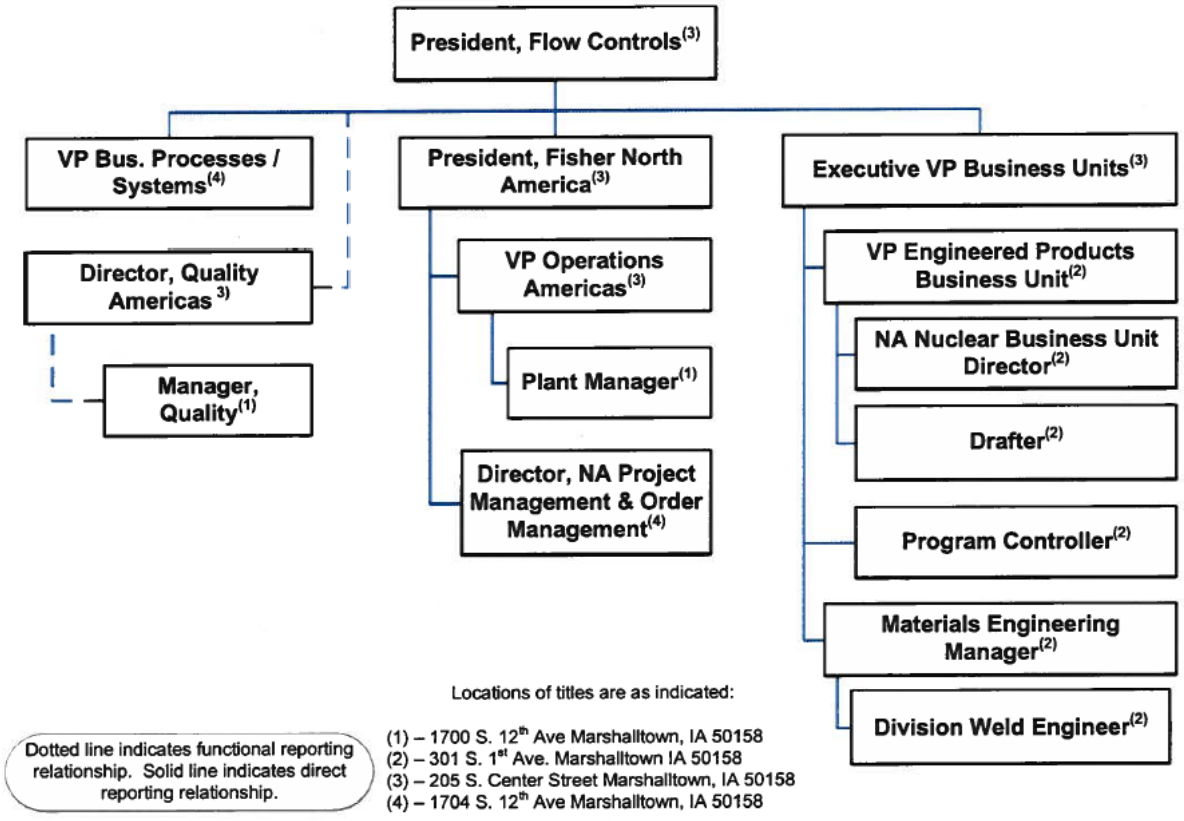
1. FMP 2J2 - Qualification of Assembly/Assembly Test Personnel
2. FMP 2J3 - Qualification of Auditors/Audit Program
3. FMP 2K19 - Inspector Training
4. FMP 2Q22 - Control of Safety-Related Components

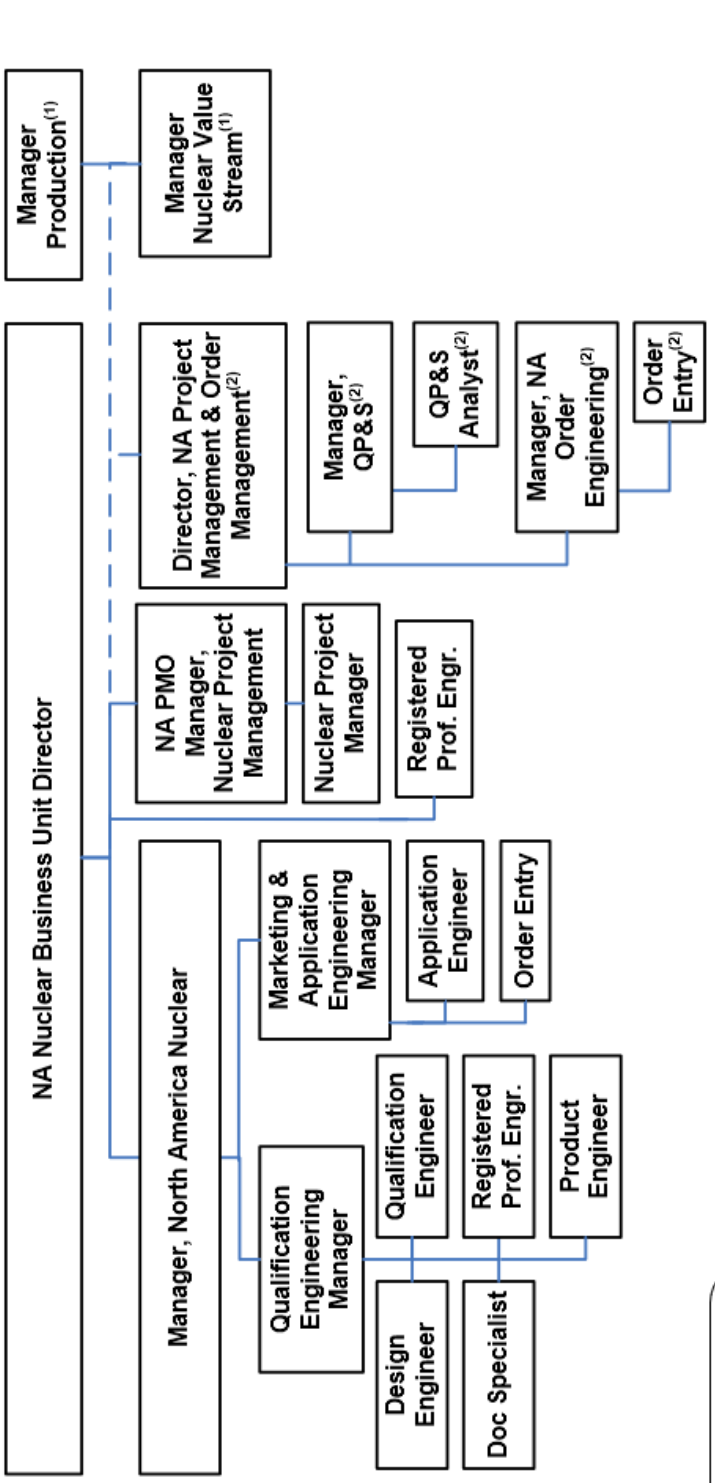
Engineering Standards (ES)

1. ES 172 - Qualification and Duties of Personnel Engaged in ASME B and PV Code Section III, Certifying Activities

3.0 ORGANIZATION STRUCTURE:

Dotted lines indicate a functional reporting relationship. Solid lines represent a direct (administrative) reporting relationship. The organizational structure was current at the time of publication. Current titles and reporting relationships can be obtained through Human Relations.

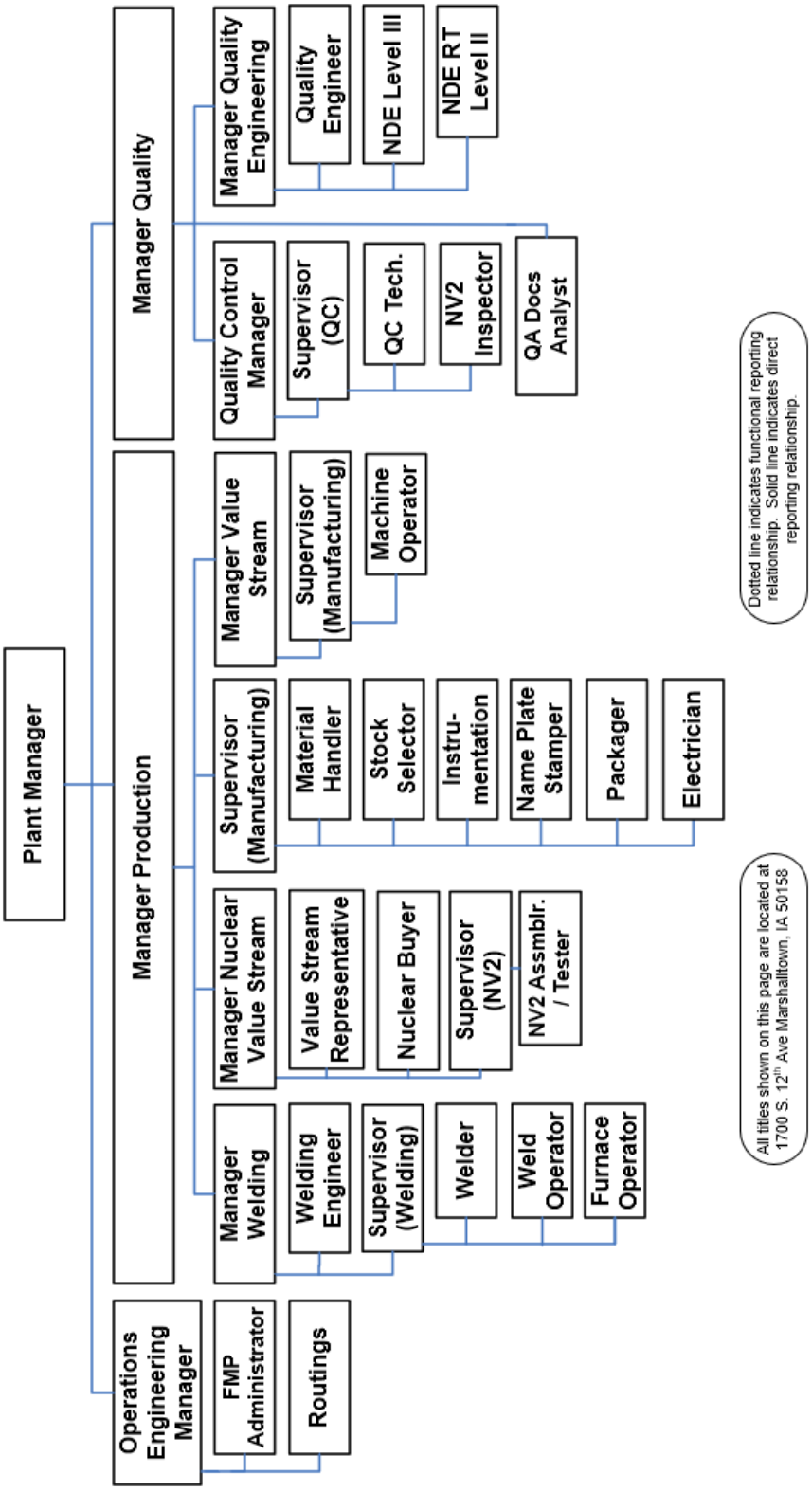




All titles shown on this page are located at 301 S. 1st Ave Marshalltown, IA 50158
Except as indicated by the following.

(1) – 1700 S. 12th Ave Marshalltown, IA 50158
(2) – 1704 S. 12th Ave Marshalltown, IA 50158

Qualification and Design Engineers are additionally located at No. 15 Xing Wang Road Wuqing Development Area Tianjin 301700, P.R. China


Plant Manager
Manager Quality
Manager Quality Engineering
Quality Engineer
NDE Level III
NDE RT Level II
Quality Control Manager
Supervisor (QC)
QC Tech.
NV2 Inspector
QA Docs Analyst
Manager Production
Manager Value Stream
Supervisor (Manufacturing)
Machine Operator
Supervisor (Manufacturing)
Material Handler
Stock Selector
Instru-mentation
Name Plate Stamper
Packager
Electrician
Manager Nuclear Value Stream
Value Stream Representative
Nuclear Buyer
Supervisor (NV2)
NV2 Assmblr. / Tester
Manager Welding
Welding Engineer
Supervisor (Welding)
Welder
Weld Operator
Furnace Operator
Operations Engineering Manager
FMP Administrator
Routings
Dotted line indicates functional reporting relationship. Solid line indicates direct reporting relationship.
All titles shown on this page are located at 1700 S. 12th Ave Marshalltown, IA 50158

ORDER ENTRY AND DESIGN CONTROL

4.0 **SCOPE:** This section of the Manual outlines responsibility and methods for processing Code and nuclear safety-related orders, and describes the preparation of design documents required to assure compliance with the Code, Design Specifications, and contract requirements. Development of the Design Specification is not part of this Program including valves NPS 4 inch and less.

4.1 **QUOTATION AND ORDER ENTRY:**

4.1.1 Quotation processing shall be handled in accordance with FMP 2Q10.

4.1.2 The *NA* Nuclear Business Unit Director receives the Representative's Purchase Order per FMP 2Q11, which incorporates the Customer Purchase Order and verifies that the Owner's Certified Design Specification and other referenced specifications are included with the order. In those cases where the Customer Purchase Order is in a language other than English, it is the responsibility of the *NA* Nuclear Business Unit Director to obtain and provide English translation. The *NA* Nuclear Business Unit Director reviews the order to assure that comments made during quotation activities have been addressed and resolves any exceptions with the customer.

The Sales Order*, generated during order entry by the Nuclear Business Unit from the Customers Purchase Order,* becomes the controlling number by which all information within the order processing system is traced and monitored.

4.1.3 The *NA* Nuclear Business Unit Director is responsible for coordinating the order entry activities, which include:

1) *Verifying* the *sales* order *contains the minimum information required to* be entered *into the business system*.

2) Determining that the Owner's Design Specification is available.

3) Determining if a Specification and Design Review (SDR) Committee Meeting is required and the appropriate committee members.

4) Scheduling SDR and chairing SDR Committee Meetings (if applicable).

5) Obtaining resolutions for comments and exceptions resulting from Specification Design Reviews or SDR Committee Meetings.

6) Assuring that ASME Section III replacement orders are reconciled per FMP 2Q23 and ES 256.

7) Assuring the completed Specification and Design Review (SDR) form 3119 (Exhibit 34) has been signed and dated by the responsible committee members and has been included in the order file and EDOCs.

8) Entry of Code and nuclear safety-related orders into the order processing system and assuring required documents are prepared in accordance with the applicable FMP 2Q series procedures.

4.1.4 Specification and Design Review Committee *(Code Assemblies)*

The Specification and Design Review (SDR) Committee consists of the Nuclear Project Manager, Application Engineer and other technical staff responsible for conducting the Design Specification Review to determine the design and processing requirements for each Code order.

The technical staff may consist of representatives from:

a) Engineering
b) Manufacturing
c) Qualification Engineering
d) QP&S
e) Quality Assurance
f) Order Entry

The SDR Committee is responsible for:

1) Recording comments and exceptions requiring clarification from the customer.

2) Determining the need for any new product designs.

3) Determining if existing designs satisfy the Owner's Design Specifications and Code requirements.

4) Determining the need for special construction detail drawings.

The completed SDR form shall be reviewed and approved by the Qualification Engineer, the Quality Control Manager, and the Quality Plans and Specifications Analyst after comments and exceptions have been satisfactorily resolved.

The *NA* Nuclear Business Unit Director maintains a copy of the Representative's Purchase Order and associated documentation, including the Owner's Design Specification and original SDR form. He/she places the approved SDR form in eDocs, with a copy of the signed form placed in the order file.

If the SDR form requires changes after initial approval, a change order will be used to document and track completion of all required changes to the SDR form and other order items per Section 4.3.

4.1.5 Partial Release Authorization:

4.1.5.1 If it is desirable to pre-order material and sufficient information is available to select components, then a Partial Release Authorization Form 3118 (Exhibit 35) will be prepared, reviewed, and approved in the same manner as the SDR form.

4.1.5.2 The completed Partial Release Authorization Form will be used as the basis to preorder material.

4.1.5.3 The approved Partial Release Authorization form will be placed in eDocs for use.

4.1.5.4 The original Partial Release Authorization form will be placed in the Order file.

4.2 DESIGN CONTROL:

The VP Engineered Products Business Unit / *NA* Nuclear Business Unit Director shall be responsible for the preparation, review, approval, revision, and distribution of engineering design output documents.

1) The Design Engineer shall perform analysis, calculations, and testing in accordance with ES119 to verify the adequacy of the design for general industrial application. The Qualification Engineer performs additional analysis, calculations, and testing to verify the adequacy of the design for Nuclear application and processes orders in accordance with ES98.

2) The principle source of design inputs shall be the Owner's certified Design Specifications, which shall be used as the basis for the preparation of design output documents. Documents used for design inputs shall be *selected and* identified *by the SDR committee, recorded on the SDR form, which is approved according to Paragraph 4.1.4, and placed* in the project file.

3) Changes to design inputs shall be identified, documented, approved and controlled by means of a change order See Paragraph 4.3.

4) All design activities shall be approved by a *Product* Engineer or Qualification Engineer located at 301 S. 1st Ave. Marshalltown, IA 50158.

4.2.1 Design Analyses and Calculations

The *NA* Nuclear Business Unit Director shall assign an engineer, competent in the applicable field of design, to be responsible for the preparation of calculations, which demonstrate the structural integrity of Code Items, in accordance with Code requirements.

Design analyses shall be performed in a planned, controlled, and documented manner. Design analysis documents shall be legible and suitable for reproduction, filing and retrieval. They shall be sufficiently detailed as to purpose, method, assumptions, design input, references, and units such that a person technically qualified in the subject can review and understand the analyses and verify the adequacy of the results without recourse to the originator.

Documentation of design analyses shall include (1) through (6) below:

1. Definition of the objective of the analyses;

2. Definition of design inputs and their sources;

3. Results of literature searches or other applicable background data, when used;

4. Identification of assumptions and indication of those that must be verified as the design proceeds;

5. Identification of any computer calculations; including computer type, computer program (e.g., name), revision identification, inputs, outputs, evidence of or reference to computer program verification, and the basis (or reference there to) supporting application of the computer program to the specific physical problem;

6. Review and approval.

Calculations shall be identified by subject, preparer, reviewer, and dated. When computer programs have been utilized in the preparation of calculations:

a) The program shall have been verified to show that it produces correct solutions for the encoded mathematical model within defined limits for each parameter employed.

b) The encoded mathematical model shall have been shown to produce a valid solution to the physical problem associated with the application.

The computer programs used for the preparation of calculations shall be controlled by the Program Controller.

When changes to previously verified programs are made, verification of the changes, reasons for the change, and an evaluation of the effect on paragraphs a) and b) above shall be performed by the Program Controller designated by the, and documented in the change records section of the program documentation file per the requirements of ES121.

4.2.2 Design Verification

Design verification shall be through design reviews, and may be supplemented by alternate calculations or qualification testing, as designated by the Product Engineer, Design Engineer, or Qualification Engineer.

The verification method and results shall be documented in the product development project file. The verifier shall be assigned by *NA* Nuclear Business Unit Director and shall be someone other than those who performed the original design, and shall be competent in the applicable field of design. Identification of the verifier and the date verified shall be included in the product development project file.

4.2.2.1 Design verification shall be performed per ES 118, ES 119, and ES 269 when applicable.

4.2.2.2 As a minimum design reviews shall address the following considerations

- Compliance with codes and standards
- Adequacy of design inputs and assumptions
- Adequacy of qualification tests and acceptance criteria
- Adequacy of calculation verification (manual and computerized)
- Suitability of materials*, parts, processes, inspection and test criteria*.
- Adequacy of design outputs compared with inputs.

4.2.2.3 As a minimum alternate calculations shall address the following considerations.

- Adequacy of assumptions, methods, sources, input data, and any other factors used in solving the problem.
- Assessment of results against the design inputs and functional requirements.

4.2.2.4 As a minimum qualification tests shall address the following considerations.

- The tests shall demonstrate adequacy of performance under the most adverse design conditions including environmental and operating conditions
- Design verification by testing may be applied to a complete unit or limited to specific design components. Where the test is only intended to verify specific components, the remaining components of the design shall be verified by other tests or verification means.
- Analyze the uncertainty of the results.
- Implementation of scaling laws and extension of qualification testing, including recording of the results, shall be per EP 9. Responsibility for implementation shall be the Qualification Engineering Manager.
- *Inspection, measuring and test equipment used in design verification shall be calibrated in accordance with ES 243*
- *Test performed on models and or mock-ups shall be subject to error analysis where applicable to final design.*

4.2.3 Seismic, Qualification and Design Reports

A Seismic Qualification and Design Report shall be prepared by a Qualification Engineer when specified by the SDR form under the following conditions:

1) A Seismic Report shall be prepared when required by the Owner's Design Specification or purchase order. Seismic Reports shall be prepared by a Qualification Engineer, reviewed by an Engineer other than the preparer, and approved by the *NA* Nuclear Business Unit Director.

2) A Qualification Report, which may include an Operability Report and/or an Environmental Suitability Report, shall be prepared when required by the Owner's Design Specification or purchase order. These reports shall be prepared by a Qualification Engineer, reviewed by a *Qualification* Engineer other than the preparer, and approved by the *NA* Nuclear Business Unit Director.

3) A Design Report shall be prepared as required by Code and ES 93. A Qualification Engineer shall prepare the Design Report. Design Reports, which include calculations or stress analysis or both, shall show that the ASME Code Section III design requirements are met for the conditions specified in the Owner's Design Specification.

4) Seismic, Qualification, and Design reports may be generated by a Documentation Specialist when a similar report has previously been prepared by a Qualification Engineer and provided checking and approving activities are conducted by those described in 1 through 3 above.

The drawings, including revisions used for design and construction, shall be in agreement with and identified in the Design Report before it is finally approved and/or certified.

A nonconformance with a "use-as-is" disposition shall be reconciled with the Design Report and Design Specification before it is finally approved and/or certified. Nonconforming Material Disposition Report (Exhibit 19) (listed by number) describing a "use-as-is" condition shall be documented within the Design Report.

A *Product* Engineer other than the one performing the original design shall *verify* Design Reports. Design Reports shall be reviewed and approved by the Qualification Engineering Manager or *NA* Nuclear Business Unit Director to assure conformance to the Code and Owner's Design Specification.

Qualification Engineering Manager or *NA* Nuclear Business Unit Director is responsible for determining Design Reports that shall be certified by a Registered Professional Engineer for Class 1 valves, and for Class 2 or Class 3 valves designed to service loadings greater than design loadings. Qualification Engineering Manager or *NA* Nuclear Business Unit Director determines if certification by Registered Professional Engineer is required and it will be noted on SDR form.

The certifying Registered Professional Engineer shall be competent in the applicable field of design, and shall be qualified in accordance with the requirements described in Paragraph 2.7.5. When certification is required by ASME Code, it will include the following statement:

> I, the undersigned, being a *Certifying* Engineer competent in the applicable field of design and using the certified Design Specification and the drawings identified below as a basis for design, do hereby certify that to the best of my knowledge and belief the Design Report is complete and accurate and complies with the design requirements of the ASME Boiler and Pressure Vessel Code, Section III, Division 1, _____ Edition with the Addenda up to and including _____.

Prior to applying the ASME Code Stamp, the *NA* Nuclear Business Unit Director shall submit completed Design Reports to the Owner, or his designee, for review and documentation of the review as required by the applicable Code Editions and Addenda. The Owner shall return his documentation of review to the *NA* Nuclear Business Unit Director. The Owner's documentation of review shall be attached to the Design Report and made available to the ANI prior to ASME Code stamping.
Revisions to the Design Report shall be reviewed, approved, and certified, when required, in the same manner as the original.

4.2.4 Design Standards

Publications such as codes, standards, and specifications (i.e. ANSI, ASTM, API, DIN, etc.) used in the design process shall be identified and controlled in accordance with ES 242. The Information Center shall identify the current edition, addenda, or revision, as appropriate, of these documents and shall ensure copies are available for use.

4.2.5 Design Interface Control

Lines of communication shall be established with each organization for the controlled transfer of design information. Design information transmitted to or from outside organizations shall be identified and documented in a transmittal letter. For design documents the document number and revision level may be sufficient. For other types of

information a description of the information shall be provided. The originator of a request for information or action shall specify that the response be transmitted back to him. The originator shall ensure the request and response can be related. An acceptable method is for the response to refer to the request by date, subject, etc. Where it is necessary to initially transmit design information orally or by other informal means, the transmittal shall be confirmed promptly by letter or other means that satisfy the above requirements. Copies of all written communications and notes of oral communications shall be retained in the Project File.

4.2.6 Design Documentation and Records

Design documents are used to define the technical characteristics of component parts and assemblies and identify important steps in the design process which support the final design. The following are required for all products that are released to production in addition to those listed in Section 5.1.1 and 5.1.2.

1) Drawings. Drawings refers to both assembly and detail drawings.

2) Engineering Master (EM). EM's are lists of the various material and functional combinations available for a specific product.

3) Product Rating. Product Ratings delineate the limitations, such as pressure and temperature, for the various material combinations available for a specific product. For pressure vessels they also include the hydrostatic test pressure and duration.

4) Fisher Finishing Specification (FFS). FFS's are used to specify surface finishes, such as platings, painting, etc. that are not covered in the Material Reference Number specification data. These specifications are not required if the needed information is provided elsewhere, such as on the drawings.

5) Fisher General Specification (FGS). FGS's are used to specify methods and procedures for general product manufacture. They are not normally used in the production of nuclear components.

6) Fisher Material Specification (FMS). FMS's are used to specify material specifications and heat-treatment conditions not covered by industry specifications (ASME, ASTM, SAE, etc.) in the required detail.

7) Assembly and Operating Instructions. These special instructions may include descriptions of the assembly, installation, disassembly, inspection, and maintenance of components.

4.3 CHANGE ORDER PROCESSING:

Customer and/or Representative Purchase Order change orders (originated by either the customer or the Company) of a technical nature are received by the *NA* Nuclear Business Unit Director and processed per FMP 2Q19.

The *NA* Nuclear Business Unit Director shall review the change order to determine the impact on the original order. *Where a significant design change is necessary because of an incorrect design, the design process and verification shall be reviewed and modified as necessary.* He/she shall identify those documents affected by the change order and shall determine if a new SDR Meeting is required. When required, this Specification Design Review shall be conducted in accordance with Paragraph 4.1.4 of this Manual.

If the SDR form is revised or a new SDR form is prepared, the review and approval shall be the same as for the original SDR form.

The *NA* Nuclear Business Unit Director initiates the required changes identified by the Purchase Order change order review. Documentation (such as Drawings, Seismic, Qualification, and/or Design Reports) affected by change orders shall be revised, reviewed, approved, and certified (as applicable) in the same manner as the original document.

4.4 ORDER MANAGEMENT ACTIVITIES:

Following FMP 2Q12, the *NA* Nuclear Business Unit Director, using the Customer and Representative's Purchase Orders, SDR form, and other engineering information, selects the Engineering Masters applicable to satisfy the order requirements, enters this information into the computer order processing system, and obtains a Manual Validation Report. The Manual Validation Report is reviewed and approved for compliance to the Customer and Representative's Purchase Orders, Design Specification, and SDR requirements *in accordance with Tale 6.1.1A.* The *NA* Nuclear Business Unit Director forwards the SDR form and the approved Manual Validation to the Nuclear Project Manager for initiation of other manufacturing processing documentation per Sections 5, 6 and 8.

4.5 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2Q10 – Nuclear Order Processing System – Quotation Processing
2. FMP 2Q11 – Nuclear Order Processing System – Order Receipt Processing
3. FMP 2Q12 – Nuclear Order Processing System – Determination of Project/Order Processing Requirements
4. FMP 2Q19 - Nuclear Order Processing System - Change Order Processing.
5. FMP 2Q23 - Reconciliation of ASME Section III, Division 1 Replacement Orders.

Engineering Standards (ES) and Engineering Practices (EP)

1. ES 93 - Nuclear Valve Design Reports - ASME Boiler and Pressure Vessel Code, Section III, "Nuclear Power Plant Components."
2. ES 98 - Research & Engineering Procedure for the Handling of Nuclear Orders at Fisher Controls - Marshalltown
3. ES 118 – Design Verification Requirements for Valve and Regulator Components
4. ES 119 - Design Control Requirements
5. ES 121 - Control and Maintenance Procedures for Emerson Process Management - Valve Division Analytical Computer Programs and Databases
6. ES 242 - Controlled Documents and Data

7. ES 243 - Control Standard for Calibration and Use of Research and Engineering Lab Test and Measuring Equipment.
8 ES 269 - Instrument Engineering Product Development Process
9. ES 256 - Code & Specification Reconciliation for Nuclear Service Replacement Parts & Components.
10. EP 9 – A Guide to Nuclear Qualification

INSTRUCTIONS, PROCEDURES AND DRAWINGS

5.0 **SCOPE:** Activities affecting quality shall be described by and performed in accordance with documented instructions, procedures, and drawings appropriate to the circumstances. These documents shall include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished. This section of the Manual identifies and describes the various instructions, procedures, and drawings utilized within the Program.

5.1 **GENERAL:**

The preparation, review, approval, distribution, and revision controls of the instructions, procedures, and drawings are addressed in Section 6 of this Manual.

5.1.1 Fisher Design Standards

These standards establish requirements utilized in product design to ensure conformance to the Code and the Company's design requirements. The following list is all inclusive of documents specifying quality activities. Fisher Design Standards are comprised of:

1. Drafting Standards (DS) - Establish requirements for engineering drawings; format, content, and detail.

2. Engineering Practices (EP) - Establish current design and calculation techniques that may be used for the design, development, maintenance, and support of the Company's products.

3. Engineering Standards (ES) - Establish basic product design and analysis requirements.

4. Fisher Finishing Specifications (FFS) - Establish standards for surface finishes.

5. Fisher General Specifications (FGS) - Establish methods and procedures for general product requirements.

6. Fisher Material Specifications (FMS) - Establish special material specifications and processing requirements.

7. Fisher Test and Evaluation Procedures (FTEP) - Establish test and evaluation procedures used in the design, development, maintenance, and support of the Company's products.

5.1.2 Other Fisher Engineering Documents

These documents establish product construction requirements. Fisher Engineering Documents are comprised of:

1. Engineering Drawings – These shall include sufficient detail and general notes to define an item's size, shape, configuration, and finished condition. These drawings are divided into 4 categories:
   a. Casting/Forging Drawings - Used for the purchase of castings and forgings and provide sufficient detail to the suppliers for the production of these materials.

b. Finished/Machining Drawings - Used for the manufacture or procurement of finished parts.
c. Fabrication Drawings - Used to provide the detail required to join parts into sub-assemblies or assemblies. These are typically used to specify requirements for weld joints, plug-stem assemblies, and bushing installations.
d. Assembly Drawings - Used to provide the relationship of parts and sub-assemblies with respect to the completed assembly.

2. Engineering Masters (EM) - Unique sets of part numbers which establish individual product construction.

5.1.3 Manufacturing Documents

These documents establish requirements for product manufacture. Manufacturing Documents are comprised of:

1. Fisher Manufacturing Procedures (FMP) and World Manufacturing Procedures (WMP) - Establish procedures for manufacturing processes (such as welding, heat treating, cleaning, nondestructive examination, etc.) and contain specific instructions such as equipment required and acceptance criteria.

2. Work Orders (Exhibit 32) - Establish a specific manufacturing and inspection sequence for each part and/or assembly.

3. Procurement Processing Requirements (PPR) (Exhibit 22) - Establish specific order/project level procurement requirements to meet the applicable Code Edition and Addenda and contractual requirements.

4. Manufacturing Processing Requirements (MPR) (Exhibit 18) - Establish specific order/project level manufacturing requirements to meet the applicable Code Edition and Addenda and contractual requirements. It is used in conjunction with the ITR to identify specific processing requirements for each item. Specific procedure(s) to be used, including revisions, shall be identified on the MPR. For Code items the MPR shall be submitted to the ANI by the Quality Control Manager for his/her review prior to release to manufacturing.

5. Assembly Processing Requirements (APR) (Exhibit 41) - Establish specific order/project level assembly requirements to meet the applicable Code Edition and Addenda and contractual requirements. It is used in conjunction with the ATR to identify specific processing requirements for each item. Specific procedure(s) to be used, including revisions, shall be identified on the APR and for Code items shall be submitted to the ANI for review.

6. Receipt Traveler (Exhibit 61) – A document generated at the time of receipt that contains information from the purchase order.

7. Inspection and Test Reports (ITR) (Exhibit 15) - Establish unique sets of project processing requirements applicable to items (Code) being manufactured for the project. The form is used in conjunction with the MPR to identify specific processing requirements for each item. Specific procedure(s) to be used shall be identified on the ITR. The Quality Control Manager shall present the ITR to the

ANI for review, and to establish hold/witness points per FMP 2Q14. The revision level imposed by the MPR at the time the procedure is used will be the revision level that is used and will be documented on the ITR by the operator.

8. Assembly Test Reports (ATR) (Exhibit 3) - Establish unique sets of project processing requirements applicable to the units being assembled for the project. The form is used in conjunction with the APR (listed by number) to identify specific processing requirements for each unit. Specific procedure(s) to be used shall be identified on the APR. For Code items, the Quality Control Manager shall present the ATR to the ANI for review, and to establish hold/witness points per FMP 2Q14. The revision level imposed by the APR at the time the procedure is used will be the revision level that is used and will be documented on the ATR by the operator.

9. Assembly Work Order (Exhibit 28) and Shipping Pick List (Exhibit 29) – Establishes an internal translation of the customer Design Specifications to provide useable information for purchasing, manufacturing, and assembly inspection processing.

10. Level C Nuclear Safety-Related Inspection Plan – Establishes a list of critical characteristics and an inspection plan to verify the critical characteristics in order to accept a commercial grade item for a safety-related application per FMP 2K27. This does not apply to Code items.

5.2 DOCUMENT LOCATION:

The *Department M*anagers and *S*upervisors shall ensure that instructions, procedures, and drawings, as applicable, are accessible in functional areas, and at inspection and testing points where they apply. They shall ensure instructions, procedures, and drawings, as applicable, are readily available to the personnel concerned, including the ANI. In many cases, the documents reside in electronic form in EDOCS.

5.3 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures

1. FMP 2K27 – Control of Commercial Grade Items to be Dedicated for Use in Nuclear Safety-Related Applications
2. FMP 2Q14 - Nuclear Order Processing System – Processing of Manufacturing Documentation.

DOCUMENT CONTROL

6.0 **SCOPE:** This section outlines the requirements for the preparation, review, approval, distribution, and revision of documents that specify quality requirements or prescribe activities affecting quality.

6.1 **RESPONSIBILITIES:**

6.1.1 The responsibilities for the preparation, review, approval, and distribution of documents shall be in accordance with Table 6.1.1A. The responsibility for the revision of documents shall be the same as that for preparation. Revised documents shall be reviewed, approved, and distributed in the same manner as the original documents.

6.1.2 Employees are responsible for using the correct revision of specifications and procedures in the final determination of issues that relate to product, processes, or procedures.

6.2 **ELECTRONIC DOCUMENTATION SYSTEM (EDOCS):**

6.2.1 EDOCS is the electronic system used for access, control, and distribution of various procedures and standards used to manufacture parts (pieces).

6.2.2 The master copy of the document resides in electronic format. The user is responsible to use the revision specified in the APR / MPR. If no revision is specified, the latest revision available in eDocs shall be used. The user will document the revision level of the document used and this is confirmed by the user's signature on the *manufacturing* document upon completion of the activity. Security of EDOCS information is discussed in Section 2.9.

TABLE 6.1.1A
PERSONS RESPONSIBLE FOR ORIGINAL DOCUMENTS AND REVISIONS:

DOCUMENTS	PREPARATION (3)	REVIEW (4)	APPROVAL	DISTRIBUTION
Nuclear Approved Suppliers List, CSP-QR	Quality Engineer	Quality Engineer (second signature not required)	Manager Quality	Quality Engineer
Audit, Survey (code), or Commercial Grade Survey Summary Reports	Lead Auditor	Lead Auditor (second signature not required)	Manager Quality	Manager Quality
DS, ES, EP, FFS, FGS, FMS, FTEP Except FGS 8F Series,	VP Engineered Products Business Unit (1)	VP Engineered Products Business Unit (1)	VP Engineered Products Business Unit (1)	Responsible Engineer
WMP	VP Engineered Products Business Unit (1)	Quality Engineer, or VP Engineered Products Business Unit (1)	Manager Quality	Responsible Engineer
FGS 8F Series	QP&S Analyst	QP&S Analyst	Manager QP&S	QP&S
FWPS, PQR	Division Weld Engineer	Division Weld Engineer(1)	Materials Engineering Manager (1)	Responsible Engineer
FWPS, PQR (code)	Division Weld Engineer	Division Weld Engineer	Manager Quality and Manager Welding	Responsible Engineer
Engineering Drawings	Drafter	Assigned checker	Applicable Product or Design Engineer	Responsible Engineer
Engineering Masters	Product or Design Engineer	Assigned checker	Applicable Product or Design Engineer	Responsible Engineer
Fisher Manufacturing Procedures (FMPs)	FMP Administrator and Responsible Engineer (1)	Responsible Engineer and FMP Administrator (1)	Manager Quality (2)	Responsible Engineer
Manual Validation Report	Order Entry	Assigned checker	Manager Quality	*NA* Nuclear Business Unit Director
PPR, MPR, APR, ITR, ATR, CSP	QP&S Analyst	QP&S Analyst and ANI for MPR, APR, ITR, and ATR.	Manager Quality	QP&S or Value Stream Representative
Purchase Order	Nuclear Buyer	Nuclear Buyer (second signature not required)	*Manager Quality*	Nuclear Buyer
Design Reports, Seismic Reports, Qualification Reports	Qualification Engineer or Documentation Specialist	Engineer	*NA* Nuclear Business Unit Director	*NA* Nuclear Business Unit Director
Work Order	Routings	Routings (second signature not required)	Manager Quality	Routings

(1) An individual may not perform more than 2 of the activities in this table.
(2) NDE procedures are also approved by the appropriate Level III.
(3) Preparation may be noted as 'written by' or 'revised by'
(4) Reviewer may be noted by 'content owner/expert' or 'checked by'

6.3 DESIGN STANDARDS, ENGINEERING DRAWINGS, AND ENGINEERING MASTERS

The VP Engineered Products Business Unit shall be responsible for maintaining a file that contains the original and revised Design Standards, Engineering Drawings, and Engineering Masters (EM). Distribution of Design Standards, Engineering Drawings, and EMs shall be in accordance with ES 81.

6.4 FISHER MANUFACTURING PROCEDURES:

The FMP Administrator shall be responsible for maintaining a file that contains the original and revised FMPs. Distribution of FMPs shall be in accordance with FMP 14A3.

6.5 CUSTOMER SPECIFICATIONS AND ORDER HANDLING FOR JOBS IN PROCESS:

The *NA* Nuclear Business Unit Director shall be responsible for maintaining a file that contains the original and revised Customer/Representative's Purchase Order, design documents, other customer specifications, and sales order information.

When changes to Customer Specifications are required, the *NA* Nuclear Business Unit Director shall request the change from the customer.

A copy of the customer provided Design Input Documents and related documentation shall be made available to the ANI.

6.6 PROCUREMENT PROCESSING REQUIREMENTS (PPR), MANUFACTURING PROCESSING REQUIREMENTS (MPR), ASSEMBLY PROCESSING REQUIREMENTS (APR), ASSEMBLY TEST REPORTS (ATR), AND INSPECTION TEST REPORTS (ITR)

The Quality Plans & Specifications Analyst shall be responsible for creating the documents indicated above. The Manager Quality is responsible for approval of the documents. The ANI shall be presented the MPR and APR for review.

The Quality Plans & Specifications Analyst shall be responsible for maintaining a file that contains the original and revised documents indicated above. The Manager, Quality shall approve the ITR and ATR during processing per FMP 2Q14. For Code items, the ANI shall be presented the ITR and/or ATR for review with the Manager Quality and to establish hold/witness points per FMP 2Q14. Distribution of the documents indicated above shall be in accordance with FMP 2Q21.

6.7 WORK ORDER:

Routings is responsible for the preparation, maintenance, revision, distribution and control of Work Orders.

6.8 GENERAL DISTRIBUTION REQUIREMENTS:

6.8.1 The managers/supervisors responsible for specific document distribution shall distribute documents in accordance with ES 242, FMP 14A3, FMP 2Q13 or FMP 2Q21 as applicable to the type of document to be distributed.

6.8.2 Distribution of Engineering and Manufacturing procedures are by release to EDOCS. Lists of changed procedures are available on EDOCS for 61 days to permit review of changes to procedures by employees potentially impacted by changes.

6.8.3 Distribution of Procurement Processing Requirements (PPR), Manufacturing Processing Requirements (MPR), Assembly Processing Requirements (APR), Assembly Test Reports (ATR), and Inspection Test Reports (ITR) are by release to EDOCS with notification to affected areas electronically. These distributions may be acknowledged by electronic receipt. When the recipient of an electronic notification opens the message, an electronic receipt is automatically sent back to the originator. This message indicates acknowledgement of receipt. Alternatively, distributions may be acknowledged by return of a paper check sheet signed by the recipient.

6.8.3.1 The originator shall contact recipients who have not acknowledged receipt within fifteen (15) working days of the distribution date; except 30 days shall be allowed for distributions outside the U.S. The originator is responsible for notifying the Manager Quality of any personnel who do not acknowledge receipt of the distribution within this period. The Manager Quality is responsible for reviewing and implementing appropriate corrective action.

6.8.3.2 The originator is responsible for keeping a record of the distribution on which the acknowledged receipt messages of distributed documents will be documented. This record shall be retained as evidence of completion of the distribution. This record shall be retained for a minimum of three years.

6.8.4 FMPs which are superseded may be utilized upon customer request. Authorization to use superseded FMPs for processing items is shown by the revision level indicated on MPRs or APRs.

6.9 REVISION CONTROL

6.9.1 The Value Stream Representative receives PPRs, MPRs, APRs, ATRs, and ITR revisions in accordance with distribution specified in Paragraph 6.8.1.

6.9.2 The Value Stream Representative is responsible for reviewing all document changes and obtaining the approval of the Quality Control Manager on the Acknowledgment of Document Revision form (Exhibit 59).

6.9.2.1 For the MPR and APR, the Quality Control Manager shall present the revised document to the ANI for review. This review of revisions shall be documented by the ANI's signature and date on the Acknowledgment of Document Revision form.

6.9.2.2 Revisions to the ITR and ATR shall be presented to the ANI for review for jobs in which the ANI has already had the opportunity to establish hold/witness points. This review shall be accomplished prior to the implementation of any revisions which involve code-related processes and activities and shall be documented by the ANI's signature and date on the Acknowledgment of Document Revision form.

6.9.3 The Value Stream Representative is responsible for the implementation of document changes on affected orders.

6.9.3.1 If change implementation is required to jobs in process in manufacturing:

A. The Value Stream Representative will complete the Acknowledgment of Document Revision form; indicating activities required to implement the change, and the affected Work Orders (Exhibit 32). He/she will sign and date the Acknowledgment of Document Revision form and forward it to the Manager*, Quality* for approval. If the item in question also requires rework, such rework shall be accomplished in accordance with Paragraph 16.2.1.

B. After receiving the returned Acknowledgment of Document Revision form, the Value Stream Representative will implement the indicated requirements. He/she shall sign and date the Acknowledgment of Document Revision form to verify completion of the change implementation activities on the indicated Work Orders, for entry of file date and filing. He/she will retrieve and destroy obsolete documents.

6.9.3.2 If change implementation is required to jobs in process in assembly:

A. The Value Stream Representative will complete the Acknowledgment of Document Revision form; indicating activities required to implement the change and the affected orders. He/she shall sign and date the Acknowledgment of Document Revision form and forward it to the Quality Control Manager for approval.

B. After receiving the returned Acknowledgment of Document Revision form, the Value Stream Representative shall implement the indicated changes. He/she shall sign and date the Acknowledgment of Document Revision form to verify completion of the change implementation activities on the indicated order, for entry of file date and filing. He/she shall retrieve and destroy obsolete documents.

6.9.3.3 If the document revision affects jobs in process at a supplier, the Value Stream Representative shall forward the document revision to the Nuclear Buyer. The Nuclear Buyer shall issue a change order to the Purchase Order (Exhibit 24) as necessary to implement the change, and verify this by signing and dating the Acknowledgment of Document Revision form. If implementation is not required, the Nuclear Buyer will state the reason why, sign, date, and return the completed Acknowledgment of Document Revision form to the Value Stream Representative for entry of file date and filing.

6.9.3.4 If implementation is not required for jobs in process, the Value Stream Representative will complete the Acknowledgment of Document Revision form, state the reason why, sign, date, and file.

6.9.3.5 Items requiring a decision as to acceptability shall be considered nonconforming and processed in accordance with Section 16 of this Manual.

6.9.4 The Value Stream Representative is responsible for completion of an Acknowledgment of Document Revision form (Exhibit 59).

6.9.5 The Quality Control Manager is responsible for maintenance of a file of completed Acknowledgment of Document Revision forms.

6.10 DRAWING CONTROL:

6.10.1 The VP Engineered Products Business Unit shall control the release and distribution of drawings and EMs, including revisions.

Revisions to these documents, per ES 2, are initiated through an Engineering Change Request/Notice (ECRN) (Exhibit 84) which must be reviewed by the designated Product Engineer for its impact upon specific customer orders.

Review of new engineering documents and their revisions must be performed by an independent qualified person, and approved by an Engineer designated as having primary engineering responsibility for the product.

The VP Engineered Products Business Unit is responsible for maintenance and distribution of engineering documentation, per ES 242, including a record of revisions to these engineering documents; which are permanently retained in the engineering document files.

6.10.2 The Value Stream Representative receives drawings and revisions in accordance with this Section, and initiates the following action:

1. Establishes a file and record, encompassing Code Items for each order entered for production. The file shall be indexed by engineering drawing number and shall indicate the revision as entered, subsequent revision, internal work order number, and/or purchase order number.

2. Requests current copies of engineering drawings and attaches them to the orders as they are released for production.

3. Revisions to orders in process will be handled in accordance with FMP 20A11.

6.11 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2Q13 - Nuclear Order Processing System - Creation and Distribution of Internal Processing Documentation.
2. FMP 2Q14 – Nuclear Order Processing System – Processing of Manufacturing Documentation.
3. FMP 2Q21 - Nuclear Order Processing System - Distribution of Documents.
4. FMP 14A3 - Distribution and Control of Fisher Manufacturing Procedures.
5. FMP 20A11 – Engineering Change Request Notification (ECRN) Process

Engineering Standards (ES)

1. ES 81 - Distribution of Engineering Information
2. ES 2 - Method for Revising Drawings and Other Engineering Documents.
3. ES 242 - Controlled Documents and Data

SUPPLIER QUALIFICATION

7.0 SCOPE: To outline requirements for assuring that qualification audits, surveys (code), and Commercial Grade Surveys of suppliers are performed in compliance with the Code, and verifying such qualifications are maintained.

7.1 RESPONSIBILITIES:

7.1.1 The Manager Quality is responsible for assuring that suppliers have established, and are maintaining a quality program that is in compliance with the Code. Each supplier on the NASL will be evaluated annually, and an audit, survey (code), or Commercial Grade Survey will be performed, except as provided for unqualified source material qualified by piece.

7.1.2 The Manager Quality is responsible for establishing a Nuclear Approved Suppliers List (NASL) (Exhibit 88), and for maintaining a file containing Quality Assurance Supplier Evaluations (including audit/survey reports).

7.1.3 The Manager Quality is responsible for performing audits, surveys (code), and Commercial Grade Surveys of potential and existing suppliers, approval of suppliers, qualification of unqualified source material, approval and control of suppliers of unqualified source material by heat and lot and source inspection. The Quality Control Manager is responsible for approval of procurement documents.

7.2 SURVEYS AND AUDITS:

7.2.1 Each supplier to be considered for inclusion in the NASL is required to establish and maintain a quality program in compliance with the Code. Suppliers will be qualified according to the requirements of FMP 2K47.

7.2.2 The Lead Auditor shall be responsible for the preparation of the Summary Report, Audit Plan, and Checklist. Audit Plan and Checklists shall be prepared appropriate to the organization to be surveyed/audited in accordance with FMP 2K46. Summary Reports shall be the basis for evaluations. After an audit, survey (code), or Commercial Grade Survey, if it is determined that the supplier's processing system and quality program comply with the requirements of the Code, the supplier may be added to the NASL with the approval of the Manager Quality.

7.2.3 Audits, surveys (code), and Commercial Grade Surveys will be performed in accordance with the Code, for Material Organizations, Suppliers of Source Materials, Suppliers of Subcontracted Services and Suppliers for 10 CFR Part 50 Appendix B. Such audits, surveys (code), or Commercial Grade Surveys shall also be performed whenever organizational, system, or functional changes occur which may affect quality. A survey (code) or Commercial Grade Survey is not required in accordance with paragraph 7.2.3.2.

7.2.3.1 Surveys (code) of Material Organizations, Approved Suppliers of qualified Source Material and Subcontracted Services and Commercial Grade Surveys of Suppliers of Subcontracted Services or Audits of Suppliers to 10 CFR Part 50 Appendix B items shall be performed at least triennially. Material Organizations qualified by the company shall be supplemented by an annual performance assessment documenting the effectiveness of the supplier's

quality program. Performance assessments shall be performed by Lead Auditors assigned by Manager Quality to meet the following:

1. Assessment frequencies shall be commensurate with the schedule of production or procurement but shall be conducted at least once annually during the interval in which materials or source materials are controlled, or services are supplied by the Material Organization being evaluated.

2. Assessments shall include a documented review of the qualified Material Organization's history of conditions adverse to quality, nonconformances, and corrective actions.

3. For Qualified Material Organizations, assessments shall include a documented review of annual testing performed since the last assessment to demonstrate conformance of sample materials to selected requirements of the material specification. Such testing shall be conducted during the period since the last assessment.

4. When the supply of materials or services is dormant and performance assessments are not performed in the first or second year from the triennial audit, a performance assessment shall be used to requalify the supplier.

7.2.3.2 As an alternative to the requirements for survey (code) or Commercial Grade Survey, and approval of calibration or testing service suppliers, Manager Quality may place supplier on NASL following verification of a valid certificate of accreditation to ISO/IEC 17025:2005 *(or :2017)* by *an accreditation body recognized by the ILAC MRA (e.g.* NVLAP (National Voluntary Laboratory Accreditation Program) or A2LA (American Association of Laboratory Accreditation)*)*, provided all of the following requirements are satisfied:

1. A Documented Review of the supplier's accreditation is performed to verify the following:

   - Accreditation is *to ISO/IEC 17025:2005 (or :2017)* a body recognized by the ILAC MRA *by an accreditation body recognized by the ILAC MRA.*
   - *For procurement of calibration services, the published scope of accreditation covers the needed measurement parameters, ranges and uncertainties.*
   - *For procurement of testing services, the published scope of accreditation for the test laboratory covers the needed testing services including test methodology and tolerances/uncertainty.*

2. Purchase Documents require the following:

   - The service must be provided *in accordance to the accredited program and* within the supplier's scope of accreditation.

- As Found calibration data must be reported in the certificate of calibration when calibrated items are found to be out of tolerance.
- The equipment/standards used to perform the calibration must be identified in the certificate of calibration.
- The purchaser must be notified of any condition that adversely impacts the laboratory's ability to maintain its scope of accreditation.
- Any additional technical and quality requirements, as necessary, based on a review of the procured scope of services. These may include tolerances, accuracies, ranges, standards etc.
- *The service supplier shall not subcontract the services to any other suppliers.*

3. A Receipt Inspection is performed to verify the Laboratory certifies:

- The service has been performed in accordance with the accredited program and within the scope of accreditation.
- The purchase order requirements are met.

7.2.3.3 Alternatively, Suppliers of unqualified source material with procedures for identification and traceability may be placed on the NASL following review and acceptance of the procedure, with revision, by the Manager Quality. *On site v*erification of the procedure shall be conducted at a frequency commensurate with procurement but at least triennially. Accepted procedure will be included in supplier requirements.

7.2.4 Lead Auditors performing supplier audits, surveys (code), or Commercial Grade Surveys shall be qualified in accordance with the Code, Section 2 of this Manual, and FMP 2J3.

7.2.5 Sales offices acting as an agent for a supplier on the NASL will be added to the NASL in conjunction with the supplier they represent. The NASL and the Purchase Order (Exhibit 24) must specify the supplier, including its exact location. These sales offices will not be audited since the product or service will be sent directly from the supplier to the Company. Sales offices shall be required to impose the technical and quality requirements of the Company's Purchase Order through their purchase order to the supplier.

7.2.6 Results of such audits, surveys (code), or Commercial Grade Surveys and recommendations for corrective action shall be recorded by the Lead Auditor in a Summary Report and in Corrective Action Requests (Exhibit 5). The Manager Quality shall maintain a file of these results. If corrective action is required, the Manager Quality shall be responsible for forwarding a copy of the Corrective Action Request and recommendations for corrective action, including a suggested/required time period for corrective action, directly to the supplier or to the Nuclear Buyer who will forward a copy to the supplier. If evaluation for 10CFR Part 21 reportability is indicated, the Lead Auditor shall forward a copy of the Corrective Action Request to the Manager Quality for processing in accordance with Paragraph 16.6. Any restrictions or limitations placed upon the supplier shall also be noted on the NASL.

7.2.7 Follow-up action shall be verified by a Lead Auditor and recorded on the Corrective Action Request. Re-audit of deficient areas shall be performed by a Lead Auditor as necessary. Upon verification of satisfactory completion of the required corrective action, the supplier may be retained on (or reinstated to) the NASL.

7.2.8 Suppliers who have not had an audit, survey (code), or Commercial Grade Survey performed within a 36 month period; suppliers who are found to be unacceptable during the annual performance assessment; or suppliers who have not had a performance assessment within a 12 month period; or suppliers who are found to be unacceptable during an audit, survey (code), or Commercial Grade Survey, or through the Company's corrective action program, shall be removed from the NASL by the Manager Quality. A grace period of 90 days may be applied to the date the audit/survey is performed per Regulatory Guide 1.28 for suppliers of Non-Code items.

7.2.9 Results of audits, surveys (code), and Commercial Grade Surveys shall be made available to the ANI upon request.

7.4 NUCLEAR APPROVED SUPPLIERS LIST:

7.4.1 Product or services required for the production of items shall only be ordered from suppliers currently on the NASL. The NASL shall show each supplier's name, location, scope of authorization or activities, any restrictions or limitations, identification by date and/or revision of the accepted Quality Program and audit, survey (code), or Commercial Grade Survey due date (expiration date); or Quality System Certificate (Materials), or Certificate of Authorization number and expiration date, or procedure in the case of suppliers of unqualified source material.

7.4.2 The NASL is a controlled document and shall be prepared, distributed electronically, and maintained by the Manager Quality. Revisions to the NASL shall occur when a supplier is added or deleted, a change in the status of a supplier, an audit, survey (code), or Commercial Grade Survey is performed, or a supplier's Quality System Certificate or Certificate of Authorization is renewed. The revision history shall be included on the NASL.

7.4.3 When a supplier is removed from the NASL, all products and services received from that supplier after the date of removal shall be considered as "nonconforming" and shall be processed in accordance with Section 16 of this Manual.

7.4.4 Personnel supplying professional services, (i.e. NDE Level III, RPE, and Training) are added to the NASL based on a review of Certifications, qualification records and Qualification procedures.

7.5 REFERENCE DOCUMENTS:

1. Marshalltown NASL

Fisher Manufacturing Procedures (FMP)

1. FMP 2J3 - Qualification of Auditors/ Audit Program
2. FMP 2K43.1.1 – Supplier Evaluation – Accreditation – Calibration Services
3. FMP 2K46 - Supplier Evaluations - Audits, Surveys (code) and Commercial Grade Surveys
4. FMP 2K47 - Supplier Qualification and Control

PROCUREMENT CONTROL

8.0 **SCOPE:** To assure that products and services provided by suppliers are ordered and processed properly and meet the Code and contractual requirements.

8.1 **RESPONSIBILITIES:**

8.1.1 The Manager Nuclear Value Stream, with support of the Manager Production, is responsible for coordinating procurement activities; including those concerned with qualification of suppliers specified in Section 7 of this Manual.

8.1.2 The Nuclear Buyer is responsible for placing Purchase Orders (Exhibit 24) with only those suppliers who appear on the NASL and including the quality program requirements on the purchase order as specified in the Defined Part Number. If bids are solicited, the Nuclear Buyer is responsible for verifying that the supplier is capable of meeting the technical and quality assurance requirements by reviewing the supplier's scope of approval on the NASL. The Nuclear Buyer is also responsible for transmitting documents referenced in the Purchase Order; including drawings, procedures, Procurement Processing Requirements (PPR) (Exhibit 22), CSP-QR (Exhibit 85) and other specifications, and any revisions to the supplier. The Nuclear Buyer shall coordinate the transmittal of required certifications, test reports, qualifications, and other documentation from the supplier to the Quality Control Manager.

8.2 **PROCUREMENT DOCUMENTS - PRODUCTS - INITIATION:**

8.2.1 Products shall be procured in accordance with the Code, customer specifications, FMP 0E3, and this Manual.

8.2.2 The Value Stream Representative coordinates the creation of a Purchase Requisition. The Purchase Requisition is forwarded to the Nuclear Buyer who prepares the Purchase Order.

8.2.3 The Nuclear Buyer attaches the appropriate reference documents (i.e. drawings, PPR, CSP-QR, etc.) to the Purchase Order and processes it in accordance with Paragraph 8.6.

8.3 **PROCUREMENT DOCUMENT – PRODUCTS - CONTENTS:**

8.3.1 The Purchase Order shall include reference to drawing numbers, material specifications, the PPR (which specifies Code Edition and Addenda, project-unique Code and/or Customer Processing requirements), the Code class, and the requirement that the product must be manufactured and supplied within a quality program qualified by the Company, or certified by ASME for a Material Organization, as meeting the requirements of the Code. When Material or Source Material are purchased for stock it is not necessary to include a PPR; providing the purchase order includes reference to the appropriate Code Edition and Addenda. When welding materials are purchased, the purchase order shall include reference to the technical requirements of NB/NC/ND-2410 provided by the Manager Welding.

Certification to the approved quality program must be provided in the supplier's documentation for Source Material or item furnished. The certification must include the Quality Systems Certificate (QSC) number, other appropriate N-Type Certificate of

Authorization number and expiration date, or identification of the Company accepted quality program, including revision level and date.

8.3.2 With the exception of castings, a statement prohibiting weld repair of any product form without prior approval of the Manager Quality will be included in the CSP-QR (Exhibit 85). Weld requirements for castings will be listed in the PPR.

8.3.3 In addition, the following requirements shall be included in the purchase order documentation:

1. Compliance with 10CFR Part 21.

2. Prompt reporting of nonconformances to the Company for resolution.

3. Access to supplier and sub-supplier premises.

4. Certificate of Compliance, CMTR, or Certificate of Conformance shall be signed by an authorized supplier representative identified either on the certification, or in the supplier's quality manual.

5. A requirement to impose Purchase Order requirements onto sub-tier suppliers.

8.4 PROCUREMENT DOCUMENTS - SUPPLIERS OF CALIBRATION SERVICES - INITIATION:

8.4.1 The Manager Quality is responsible for the initiation of a Purchase Requisition specifying the Master Gage or measuring instrument to be calibrated, and appropriate requirements and/or instructions.

8.4.2 The Purchase Requisition shall be forwarded to the Nuclear Buyer for signature authorization approval, and initiation of a Purchase Order, including the Appendix or CSP-QR, to the appropriate supplier as listed on the NASL. Content and requirements of the Purchase Order shall be appropriate to the nature of the calibration service or gage.

8.4.3 Purchase Order processing for calibration services that do not require a survey (code) or Commercial Grade Survey shall be in accordance with paragraph 7.2.3.2.

8.4.4 A Shipping Authorization is created by the Nuclear Buyer identifying the Purchase Order and gage number and shall accompany the gage to the supplier.

8.5 PROCUREMENT DOCUMENTS - SUPPLIERS OF SUBCONTRACTED SERVICES - INITIATION:

8.5.1 The subcontracted service, along with the requirements, shall be identified by the Defined Part Number listed on the Work Order. The Nuclear Buyer shall initiate a Purchase Order, including the CSP-QR, for the supplier to perform the required subcontracted service on the item. This Purchase Order shall include, as required: reference to drawing numbers, material specifications, PPR/MPR (which identify Code and Addenda and project-unique Code, and/or customer processing requirements), the Code Class, and the requirement that the service provided must be accepted by the Company as meeting the requirements of the Code. A Shipping Authorization identifying the Purchase Order shall accompany the item to the supplier.

8.6 PROCUREMENT DOCUMENTS - PROCESSING:

8.6.1 For calibration purchase orders the Nuclear Buyer shall forward the Purchase Order, CSP-QR, PPR, and or any contractually required procedures to the Manager Quality. The Purchase Order and supporting documentation is then returned to the Nuclear Buyer who attaches the applicable drawing(s), and forwards the procurement package to the supplier.

8.6.2 For Defined Part Numbers, additional review is not required because the review occurs at the time of the Defined Part Number creation. Within the Oracle business system, the Manager Manufacturing Engineering initiates the creation of a Defined Part Number by transferring the BOM as defined by the Nuclear Business Unit. The *Operations Engineering* Manager then sends the Defined Part Number through the Manager Nuclear Value Stream, Nuclear Buyer, and the Manager Quality. After review and approval by the Manager Quality, the Defined Part Number is active and released for purchase.

8.6.3 Changes to the original Purchase Order shall be processed in the same manner, and require the same approvals as the original Purchase Order.

8.7 DOCUMENTATION:

Supplier documentation (i.e. Certificate of Compliance, Certificate of Conformance, CMTR, NDE Test Reports, Heat Treat Reports, copies of sales office purchase orders, or any other documentation required) shall be sent to the Manager Quality for processing in accordance with Section 18 of this Manual. Certificates of calibration shall be sent by the *S*upplier to the Manager Quality for approval *and controlled* per FMP 2K27.3.

8.8 QUALIFICATION OF UNQUALIFIED SOURCE MATERIAL:

In the event that a particular raw material / rough stock is not readily available from a Material Organization or Approved Supplier, the Qualification Engineer and with the assistance of the Manager Quality may elect to procure unqualified source material. The Manager Quality will locate a supplier and determine if the unqualified source material can be purchased such that each piece will undergo the required testing or if the unqualified source material will require testing, other than product analysis, of the specification on the each heat or lot.

8.8.1 If testing will be performed on each piece of the unqualified source material, a Purchase Requisition will be prepared by the Value Stream Representative containing the following:

1. Description of the unqualified source material.
2. Certification of the requirements of the specification from the original mill shall contain the heat analysis, method of manufacture, heat treatments performed, and a statement attesting that no welding with filler metal has been performed on the piece.

8.8.2 If testing, other than the product analysis, is to be performed on each heat or lot, the Purchase Requisition prepared by the Value Stream Representative shall include the procedure and revision previously reviewed and accepted, identified on the NASL, in addition to the requirements in Section 8.8.1. The Certification shall include the procedure and revision used for the identification and traceability of the unqualified source material to the certification.

8.8.3 The Nuclear Buyer shall prepare the Purchase Order containing the requirements of the Purchase Requisition and include the requirements of Section 8.3.

8.8.4 Unqualified source material is received per Section 11.2. The Quality Control Manager shall review the certification for conformance to the Purchase Order and specification requirements. Following receiving an NMDR is generated by the Manager Quality to control the qualification of the unqualified source material as described in Section 16 of this Manual. The following requirements shall be included in the NMDR.

1. *No welding with filler metal has been performed on the unqualified source material shall be stated on the material test report by the organization that establishes the material form.*

2. Each piece of unqualified source material shall have a product analysis performed to verify the chemical composition by an Approved Supplier.

3. Each piece of unqualified source material shall have the other requirements of the specification performed to verify compliance with the specification by an Approved Supplier. As an alternative to testing each piece *for all other requirements*, Testing may be performed on each heat and lot of unqualified source material provided:

- A Certified Material Test Report is provided with the unqualified source material.
- The unqualified source material is traceable to the Certified Material Test Report.
- The Purchase Order and supporting documentation require that the suppliers of unqualified source material establish written procedures for identifying source materials in a manner that provides traceability to the Certified Material Test Report.
- The Manager Quality reviews and accepts the supplier's identification and traceability procedures and performs an on-site verification for compliance with the procedures at a frequency commensurate with the schedule of production or procurement, but at least once triennially.
- Upon receipt, The Manager Quality shall verify by review of objective evidence, that the requirements of the Purchase Order and supporting documentation have been met.

4. The project specific requirements based on the Code Class and Edition and Addenda of ASME Section III Division 1 for NDE, impact testing, etc.

8.8.5 The test or examination results performed by the Approved Suppliers shall be reviewed by the Manager, Quality. If acceptable a CMTR is prepared per Section 18.9 to document the now qualified source material as Material.

8.8.6 This Material is identified and placed in Stock for use as described in Section 9 of this Manual.

8.9 RECERTIFICATION OF CODE MATERIAL

When required, the Qualification Engineering Manager shall review Code material for acceptability to other Editions and Addenda or Code Class, and shall document this by attaching the Company's

CMTR (Exhibit 75) or Certificate of Compliance (Exhibit 78) to the original CMTR to certify that the requirements of the other Edition and Addenda have been met. Additional qualification activities required by the recertification shall be controlled on an NMDR.

8.10 MATERIAL SUPPLY ACTIVITIES

When performing *material supply* activities, the following quality assurance program requirements and provisions shall be followed with the exception of the ANI involvement.

8.10.1 The Manager Quality is responsible for verification of compliance with Material *Supply* activities and requirements.

8.10.2 The organization shall be in accordance with Section 3 of this Manual.

8.10.3 The quality assurance program and quality assurance manual shall be in accordance with Section 2 of this Manual.

8.10.4 Order Entry and Quality Plan processing shall be in accordance with Section 4 of this Manual.

8.10.5 The Qualification of Personnel shall be in accordance with Section 2 of this Manual.

8.10.6 Document Control shall be in accordance with Section 6 of this Manual.

8.10.7 Control of Purchased Material and Services shall be in accordance with Section 8 of this manual.

8.10.8 Control of Special Processes shall be in accordance with Sections 9 and 10 of this Manual. Special Processes shall not change product form, material specification, or affect mechanical properties and shall not include welding or brazing.

8.10.9 Handling, Storage, Shipping and Preservation shall be in accordance with Section 14 of this Manual.

8.10.10 Examination, Tests, and Reports shall be in accordance with the applicable requirements of Section 10 and Section 15 of this Manual.

8.10.11 The Control of Nonconforming Material shall be in accordance with Section 16 of this Manual. The Control of Corrective Action shall be in accordance with Section 17 of this Manual.

8.10.12 Certification of Material shall be in accordance with the following requirements per FMP 2K1.6:

a) When material is supplied, a Certificate of Compliance, CMTR, or Certificate of Conformance containing the following data (as a minimum) shall be furnished with the material:

- Customer's name
- Customer order number
- Reference to the attached Material Organization or Certificate Holder's CMTR with all required documentation identified and attached.

- Description of the material; including specification number, grade, class, type and nominal size, as applicable
- Description of material identification marking.
- A CMTR for any activities performed by the Company (See Paragraph 18.9)
- The Company's NPT Certificate number and expiration date

b) The original Material Organization or Certificate Holder's CMTR (or Certificate of Compliance) along with the Company's CMTR (Exhibit 75) shall be identified and attached to the Company's Certificate of Compliance and furnished to the customer. This Certificate of Compliance shall be signed by the Manager Quality to certify that the contents of the report are correct and accurate, and that the material is in compliance with the requirements of the Material Specification and the Code.

c) Additionally, when required by the customer, the Company's CMTR, or Certificate of Compliance, shall identify this Manual's revision level and date on which the material was supplied.

8.10.13 The Transmittal of Documents shall accompany the material.

8.10.14 The Control of Measuring and Test Equipment shall be in accordance with Section 13 of this Manual.

8.10.15 Internal Audits shall be conducted in accordance with Section 19 of this Manual.

8.10.16 The Qualification of Material Organizations, Approved Suppliers of Qualified Source Material, and sub-contracted services shall be in accordance with Section 7 of this Manual.

8.10.17 Inspectors shall assure that products received meet requirements of the procurement documents, engineering drawings, and the Code in accordance with Section 11 of this Manual.

8.11 CONTROL OF COMMERCIAL SUPPLIERS (NON-CODE ITEMS):

When required to provide reasonable assurance that a commercial grade item/service will perform its intended safety function and verification can not be completed by in-house inspection, tests, or analyses, the critical characteristics shall be verified by commercial grade survey or source verification of the supplier and additional controls shall be invoked on the purchase order.

8.11.1 Commercial grade surveys shall be performed by Lead Auditors and shall evaluate the adequacy of a supplier's commercial quality controls over identified critical characteristics per FMP 2K43. The verified processes and controls, including revision level, shall be invoked as a part of the purchase order.

8.11.2 Source verification is the witnessing of verification of conformance of identified critical characteristics at the supplier's facility by a Lead Auditor. This activity is to be performed per FMP 2K49. The purchase order shall invoke mandatory hold points for processes that require witnessing.

8.12 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 0E3 - Nuclear Purchasing & Unqualified Source
2. FMP 2K1.6 - Certification of Unqualified Source Material as ASME Code Material
3. FMP 2K43 – Supplier Evaluation – Survey (code), Commercial Grade Survey
4. FMP 2K49 – Supplier Evaluation – Technical Surveillance
5. FMP 2K27.3 – Control of M&TE Commercial Grade Items to be Dedicated for Use in Nuclear Safety-Related Applications.

IDENTIFICATION AND CONTROL OF MATERIAL AND ITEMS

9.0 **SCOPE:** To outline the operations necessary to ensure that items used in products manufactured in accordance with the Code are identified and controlled from receipt through shipment.

9.1 **RESPONSIBILITIES:**

The Material Handler is responsible for the receipt of incoming items in accordance with FMP 2Q14.

9.2 **RECEIVING:**

9.2.1 The Material Handler receives product. He/she obtains the correct documentation from the Receiving Department and assures the documentation accompanies the product.

9.2.2 The Material Handler forwards product to the appropriate area for inspection per Section 11 of this Manual. If product is accepted, it is sent to the proper stockroom location.

9.2.3 Product shall be handled in accordance with Section 14 of this Manual.

9.3 **IDENTIFICATION OF MATERIAL**:

9.3.1 Materials shall be identified by:

1. The Material Handler, Stock Selector, NV2 Assembler / Tester or Inspector will verify the heat and/or lot number and then stamp the Piece Serial Number on the materials. If stamping or etching the material is not feasible due to size or surface finish, an Identification Tag (Exhibit 11) with the heat/lot number, material identification and the identifying piece serial number will be attached to the material (or the material will be placed in an envelope with the same identification information). The Inspector, who is a different individual from the one who stamped or etched the identification on the material, will verify the material has been correctly identified with heat and/or lot number and Piece Serial Number.

   Piece Serial Numbers are unique, system generated numbers which are marked on each part. Piece Serial Numbers may be assigned at any point in the process, however will be assigned prior to the operation requiring unique identification.

2. Recording of the heat and/or lot number of the material and the Piece Serial Number on the receiving, manufacturing, and assembly documentation is verified by the Inspector in accordance with FMP 2Q14.

3. Ensuring that the heat and/or lot number, and Piece Serial Numbers are maintained on materials during processing. The verification of identification is the responsibility of the respective Supervisor.

4. Weld material containers shall clearly identify the welding material by indicating the material specification, grade (when applicable), classification number, manufacturer's name, and lot and/or heat control number. When welding is to be performed, the lot and/or heat number, size, manufacturer, and type of filler material used, as well as identification information concerning the part(s) to be welded, shall be recorded on the Weld Order (Exhibit 39) per Section 10 of this Manual.

9.4 STORAGE OF MATERIALS AND OTHER CODE ITEMS:

Materials and other products shall be stored per Section 14 of this Manual. *In addition limited life items shall be handled in accordance to FMP 3C5 by the Supervisor Manufacturing.*

9.5 CONTROL OF MATERIALS DURING MACHINING:

The control of products during machining, special processing, and inspection operations shall be in accordance with Sections 10 and 11 of this Manual, and FMP 2Q14.

9.6 CONTROL OF MATERIAL AND OTHER ITEMS DURING ASSEMBLY:

9.6.1 The Manager Nuclear Value Stream shall be responsible for recording the items assigned to each assembly (heat and/or lot number and piece serial number) on the ATR. After the items have been selected from the storage location, the Manager, Quality shall verify the material identification and that the items selected are correct and complete. If an ANI hold point is indicated, the Manager, Quality notifies the ANI that the items are staged and available for his/her review/inspection.

9.6.2 After verification and approval of items and documentation, (and verification of ANI acceptance, if required) the Manager, Quality shall sign the ATR (Exhibit 3) as notification to the appropriate Supervisor that the items are ready for assembly.

9.6.3 The Manager, Quality shall accumulate the associated processing documentation (i.e. ITR, NDE Reports, weld maps, ATR, etc.) to begin to prepare the documentation package required to satisfy the Code and Customer Order.

9.7 CONTROL OF NONCONFORMING MATERIALS:

Nonconforming materials shall be processed in accordance with Section 16 of this Manual.

9.8 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2Q14 - Nuclear Order Processing System - Processing of Manufacturing Documentation.
2. *FMP 3C5 - Stocking and Rotation Control of Elastomer Parts.*

CONTROL OF SPECIAL PROCESSES

10.0 **SCOPE:** To outline the responsibilities, requirements, and personnel qualifications necessary for the control of special processes. A suitable environment will be provided for items during the performing of fabrication processes, including: welding, heat treating, nondestructive examination, and painting; under controlled conditions in accordance with the Code, the Customer Specification, and other special requirements.

10.1 **RESPONSIBILITIES:**

10.1.1 The Manager Quality is responsible for assuring conformance to the requirements included in this Section.

10.1.2 Personnel performing special processes will be qualified in accordance with this Section.

10.2 **WELDING:**

10.2.1 Welding operations shall be performed using qualified Welding Procedure Specifications (WPS) and welders or weld operators currently qualified per ASME Section III, Division 1 and ASME Section IX. WPSs are contained within FMPs or FWPSs. Required welding operations shall be specified on the Work Order, and for Code items specific welding procedures shall be specified on the ITR with revision on the MPR. The Supervisor (Welding) is responsible for selecting and supervising the welder or weld operator, and assuring the proper procedures are used. The welder or weld operator is responsible for completing, signing, and dating the Weld Order (Exhibit 39). Upon completion of the operation, the welder or weld operator shall stamp their identification symbol adjacent to the fabrication weld, when possible. For Code items, the welder or weld operator will record the revision of the procedure used on the ITR.

10.2.2 The Manager Welding shall be responsible for the supervision of the qualification of the WPSs including the monitoring and recording of the actual parameters being used. The Division Weld Engineer shall be responsible for the supervision of the qualification of the FWPSs including the monitoring and recording of the actual parameters being used. The Manager Welding, for WPS, and Division Weld Engineer for FWPS, reviews the test results and if acceptable records the actual parameters used in welding and the test results in the PQR. Upon the successful completion of the testing and examination required by the Code, the WPSs shall be approved by Manager Quality, and the Procedure Qualification Records (PQR) shall be certified by the Manager Quality.

The WPSs shall be re-qualified if there is a change in an essential or supplemental essential variable.

If there is a specific reason to question the welding procedure, the ANI or Manager Welding may require re-qualification.

10.2.3 WPSs, developed in accordance with Section 6 of this Manual, shall be used for Welder Performance Qualification (WPQ).

10.2.4 The Manager Welding is responsible for the supervision of the qualification of welders and weld operators. Qualification operations shall be witnessed by the Manager Welding; who shall monitor and record the actual parameters being used. The Manager Welding

reviews the test results and if acceptable records the actual parameters used in welding and the test results in the WPQ/WOPQ. The Manager Welding shall certify the WPQ/WOPQ following satisfactory testing and examination of the qualification coupon in accordance with the Code. The Manager Welding shall assign a unique identification symbol to each certified welder or welding operator.

The Supervisor (Welding) shall create a monthly record; showing each welder's performance to a process for the purpose of documenting welder qualification. This record shall be submitted monthly to the Manager Welding. The Manager Welding shall establish a Welding Log (Exhibit 40) for each welder or weld operator; listing the name of the welder or weld operator, process, and procedure utilized. He/she is responsible for keeping the Welding Log current and available to the Manager, Quality, the Supervisor (Welding), and the ANI. The Supervisor (Welding) shall assign tasks to the welders or welding operators on the basis of WPQ.

10.2.5 The performance qualifications of a welder or weld operator shall be affected under the following conditions:

1. When he/she has not welded utilizing a particular process during a period of 6 months or more, his/her qualifications for that process shall expire.

2. Renewal of expired qualifications may be made for any process by welding a single test coupon of either plate or pipe, of any material, of any thickness or diameter, in any position, and by testing of that coupon as required by the Code under the supervision of the Manager Welding. This renews the welder or weld operator's previous qualifications for that process for those materials, thicknesses, diameters, positions, and other variables for which he/she was previously qualified.

3. When there is a specific reason to question his/her ability to perform welding which meets the WPS, his/her qualification shall be revoked by the Manager Welding. The ANI may also require re-qualification if he/she questions the ability of the welder or weld operator to meet the requirements of the WPS.

4. The welder or weld operator shall be re-qualified if their qualification has been revoked, or if there is a change in a welder performance essential variable. In this event, re-qualification shall be completed by using a test coupon appropriate to qualify him/her for the production work which he/she will be welding. The test coupon shall be tested as required by the Code, and found to be satisfactory prior to performing the work.

10.2.6 Welding material shall be purchased per Section 8 and received per Sections 9 and 11 of this Manual, and shall be controlled as follows:

1. Material containers shall clearly identify the welding material by indicating the material specification, grade (when applicable), classification number, manufacturer's name, and lot and/or heat control number.

2. Opened material shall be segregated by lot control number and/or heat number in the welding material area until issued. In addition, covered electrodes and fluxes shall be stored, upon opening the container, in a "lot controlled" oven at a temperature in accordance with FMP 5A1 to prevent moisture contamination.

3. Welding filler material shall be stored in a central location, and its distribution controlled by the Supervisor (Welding). The Supervisor (Welding) shall determine the appropriate welding materials to be issued, based on the requirements of the Welding Procedure Specification listed on the MPR for each Code order. He/she shall issue material for each welding operation noting lot control and/or heat number, manufacturer, and size on a Weld Order (Exhibit 39). The Supervisor (Welding), welder or weld operator, and the Inspector shall sign and date the Weld Order. Only sufficient covered electrodes to complete the welding operation, or to last for a period of 4 hours maximum, shall be issued to the welder or weld operator.

4. Covered electrodes when issued in heated portable ovens, extend the time to the end of the welder's shift, but no longer than 12 hours. Unconsumed electrodes and Bare Wire may be returned to the Supervisor (Welding), inspected for damage, cleanliness, and identification, and returned to storage. Unacceptable wire and electrodes are scrapped.

10.2.7 Heat treatment of fabrication welds and repair welds of base material shall be in accordance with the appropriate FMP or FWPS, the material specification, and the Code (see Paragraph 10.3). The Manager, Quality shall review heat treat records to assure that cumulative time at temperature does not exceed the time permitted by the WPS and the Welding Material Qualification.

10.2.8 Welding of impact tested ferritic base material shall be performed using only welding filler material from the heats/lots which have been impact qualified to the same requirements as the base material.

10.2.9 Repair weld of defects in base material, fabrication welds, and hard-surfacing shall be performed as permitted by the material specification, the Code, and the Design Specification.

10.2.10 Weld repair of base material and welding defects will be authorized by an NMDR (see Section 16 for dispositioning of nonconformances and the ANI interface). Each defect exceeding the lesser of 3/8" or 10% of the section thickness in depth shall be documented as follows:

1. A Weld Map (Exhibit 57) showing the location and size of repair shall be prepared by the Quality Control Technician , or other qualified Q.A. Personnel, and included with the Work Order.

2. The Supervisor (Welding) is responsible for selecting the welder or weld operator, and assuring the proper procedures are used. He/she is responsible for completing, signing, and dating the Weld Order (Exhibit 39).

3. Upon completion of the welding operations, the Supervisor (Welding) shall forward the required post-weld heat treat time-temperature charts to the Manager, Quality for review and approval. This documentation will be made available to the ANI.

4. The NDE Level I, NDE Level II, or NDE Level III shall perform nondestructive examination as required by the Code and the Design Specification. Reports of nondestructive examination shall be prepared, as required, by Paragraph 10.4.3.

10.2.11 Welding machine control instrumentation and weld rod ovens shall be calibrated as specified in Section 13 of this Manual.

10.2.12 WPSs, PQRs, and WPQs are made available to the ANI.

10.3 HEAT TREATMENT:

10.3.1 FMPs shall be developed in accordance with Section 5 of this Manual as required to conform to Code and Design Specification base material heat treatment requirements. These procedures shall include the requirements for equipment, heating, holding, and cooling; including temperatures, times, rates, and controls.

10.3.2 The ITR shall specify the FMP for the required heat treatment of fabrication. The Weld Order shall specify the FMP to be used for repair welds. These procedures shall be in accordance with the Code, the Design Specification, and the material specification.

10.3.3 The following requirements apply to heat treatment operations:

1. When heat treatment is required, either by the material specification or as post-weld heat treatment, such heat treatment shall be performed in a temperature surveyed and calibrated furnace or controlled by thermocouples in contact with the material, or attached to blocks in contact with the material. Heat treatment shall be documented with a time-temperature chart which shall include the following information:
   a. Piece Serial Number
   b. Procedure/Revision Number
   c. Furnace or Thermocouple Recorder Serial Number
   d. Furnace Operator
   e. Date
   f. Time Scale
   g. Job Number
   h. Part Number

2. Nonconformities shall be processed in accordance with Section 16 of this Manual.

3. The furnace controllers, furnace recorders, and thermocouple recorders shall be calibrated in accordance with Section 13 of this Manual.

4. Heat Treatment procedures and records shall be made available to the ANI.

10.4 NON-DESTRUCTIVE EXAMINATION (NDE):

10.4.1 NDE procedures (MT, PT, RT, UT, VT) are FMPs and are prepared in accordance with the Code, approved by the NDE Level III who is certified in the appropriate method.

The Manager, Quality shall assure that NDE procedures are qualified by actual demonstration (prior to use) to the satisfaction of the ANI, and documented by signature and date on a record of procedure qualification maintained by the NDE Level III.

The ANI may require the re-demonstration of NDE procedures if there is reason to question the procedure's capability. If there is a change in an essential variable, re-demonstration shall be required.

Written procedures, records of demonstration of procedure capability, and personnel qualification and certification shall be made available to the ANI. Specific procedure(s) to be used shall be identified on the applicable NDE examination report and the ITR for Code Parts. The revision level imposed by the MPR at the time the procedure is used will be the revision level that is used and will be documented on the applicable NDE examination report and the ITR for Code Parts by the Non-destructive examination personnel. A copy of the applicable procedures shall be readily available to Non-destructive Examination personnel.

10.4.2 Company personnel performing NDE activities must be qualified and certified to the written practice, FMP 2J1, meeting the requirements of the Code and SNT-TC-1A. Qualification and certification of the NDE Level III shall be the responsibility of the Manager Quality. Qualification of NDE Level I and II personnel is the responsibility of the NDE Level III. Certification of NDE Level I and II personnel is the responsibility of the Manager Quality. NDE personnel shall be qualified and certified by examination in accordance with a written practice which meets the requirements of the Code and SNT-TC-1A; as applicable for the technique and methods used.

Personnel qualified by examination, and certified to previous editions of SNT-TC-1A are considered to be qualified to the latest accepted Code edition when re-certification is based on continuing satisfactory performance. Re-examinations and new examinations shall be in accordance with the latest Code accepted edition.

Personnel qualification and certification records shall be on file with the NDE Level III, and shall be made available to the ANI. Re-qualification may be required of NDE Level I or Level II personnel by the Manager Quality, the Supervisor (QC) the NDE Level III, or the ANI if he/she has reason to question the performance of that person.

10.4.3 A Non-Destructive Examination Report (Exhibit 52) shall be prepared for penetrant examinations and magnetic particle examinations. An Inspection Report of Radiography (Exhibit 79) shall be prepared for radiographic examinations. An Ultrasonic Test Report (Exhibit 81) shall be prepared for ultrasonic examinations. The examination report must be signed and dated by the person performing the examination, and indicate the level of his qualification. Evaluation will be performed only by NDE Level II or Level III personnel certified in the applicable method.

Results of NDE examinations shall be maintained as appropriate in accordance with Section 18.

10.4.4 NDE services, including Level III services, may be subcontracted to approved suppliers listed on the NASL. The supplier's written practice and NDE personnel qualifications and certifications shall be reviewed by the Manager Quality to ensure conformance to the requirements of SNT-TC-1A and the Code. If acceptable, the Manager Quality shall appoint the NDE Level III personnel by letter.

Subcontracted NDE personnel qualification and certification records shall be maintained by the Manager, Quality and shall be made available to the ANI.

10.4.5 NDE equipment shall be calibrated as specified in Section 13 of this Manual.

10.5 PAINTING:

Each unit requiring special paint is painted in accordance with an FMP or WMP as specified in the APR and Assembly Work Order.

10.6 BENDING AND FORMING:

The Company does not perform any bending or forming on items.

10.7 MECHANICAL JOINING:

Mechanical joining shall be performed to applicable FMPs / WMPs developed in accordance with Section 5 of this Manual, or as specified in the APR.

10.8 IDENTIFICATION OF CHECKPOINTS:

ASME Code processes that affect quality:

1. Purchasing – Section 8.6
2. Fabrication
   a. Marking of material - Section 9.3
   b. Approval of ATR - Section 9.6.1
3. Handling – Section 14.2
4. Shipping – Section 14.4
5. Receiving
   a. Rough stock inspection - Section 11.2
   b. Purchased parts inspection – Section 11.3
6. Storing – Section 14.3
7. Cleaning – Section 14.3.5
8. Inspecting
   a. During manufacturing - Section 11.4
   b. Finished inspection – Section 11.5
   c. Final assembly inspection – Section 11.6
9. Testing Inspecting
   a. Assembly testing - Section 11.6
   b. Testing – Section 12.2
10. Repairing / Rework – Section 16.2

10.9 REFERENCE DOCUMENTS:3

Fisher Manufacturing Procedures (FMP)

1. FMP 2J1 – Nondestructive Testing Personnel Qualification and Certification.
2. FMP 5A1 – Control of Covered Welding Electrodes.

INSPECTION

11.0 **SCOPE:** To identify various inspection functions, and to delineate requirements and responsibilities which assure proper inspection of product in accordance with the Code and Customer design input documents.

11.1 **RESPONSIBILITIES:**

11.1.1 The inspection of products shall be performed by Quality Control Technicians, NV2 Inspectors, or Quality Assurance Representatives who are trained and qualified. Inspections will be accomplished using engineering drawings and specifications referenced on appropriate CSP documentation. The following types of inspection shall be performed in accordance with FMP 2Q14 and FMP 2Q16:

- Castings, Forging, Bar, Plate, and Tubular Material Inspection
- Welding Filler Material Inspection
- Purchased Parts Inspection
- Inspection During Manufacturing
- Weld Shop Inspection
- Semifinished and Finished Inspection
- Assembly, Testing, and Final Assembly Inspection

11.2 **ROUGH STOCK INSPECTION:**

11.2.1 The Inspector shall assure that raw material / rough stock received conform to the requirements specified on the procurement specifications, the engineering drawing, and this Section. Inspection shall be performed per applicable portions of FMP 2A1, and as follows:

11.2.1.1 Raw Materials / Rough Stock

A. The Inspector shall verify that the vendor is on the NASL, and that material is in accordance with the Purchase Order requirements found on the Receipt Traveler (Exhibit 61).

B. Bar and tubular material for nuclear use shall be marked with heat and/or lot number on both ends. The Inspector shall verify the material to be cut, and ensure that both ends are stamped or etched prior to cutting. After cutting, the Inspector shall verify the material identification, record the heat and/or lot number, and for Code items shall sign and date the ITR.

C. The Inspector shall inspect the wall thickness of each pressure boundary casting or forging in accordance with minimum wall thickness dimensions included on the casting or forging drawing, the machine drawing, and/or the appropriate FMP.

D. The Inspector shall inspect material for visual defects.

E. The Inspector shall check raw material / rough stock that was ordered with non-destructive testing requirements, such as radiography, magnetic particle, liquid penetrant, or ultrasonic inspection, to verify that pieces have been properly marked. Stamping, when used, shall

be done with low stress blunt-nosed-continuous or interrupted dot die stamps.

F. The Inspector shall check the raw materials / rough stock for a heat and/or lot number and material identification. If two or more parts have the same heat and/or lot number, each part shall have a Piece Serial Number assigned.

G. The Inspector shall confirm receipt of CMTR or Certificate of Compliance.

H. The Inspector shall verify the material identification on the parts, record the heat and/or lot number in the receiving inspection details collection plan in accordance with FMP 2A1 and sign and date the Receipt Traveler (Exhibit 61) to indicate completion.

I. The Material Handler is responsible for locating material in accordance with Section 14.

J. Manager, Quality reviews and approves CMTRs and other supplier documentation.

K. The Inspector shall process nonconforming material in accordance with Section 16 of this Manual.

11.2.1.2 Welding Filler Materials

A. The Inspector shall verify that the Material Organization is on the NASL.

B. The Inspector shall inspect to the requirements of the Purchase Order requirements found on the Receipt Traveler (Exhibit 61).

C. The Inspector shall inspect welding filler material containers for damage and required markings, and process in accordance with Section 10. The Manager, Quality reviews and approves the certification, and assigns a unique control number for identification.

D. The Inspector shall ensure that approved materials are properly stored in the weld shop storage area.

E. The Inspector shall process nonconforming materials in accordance with Section 16 of this Manual.

11.3 PURCHASED PARTS INSPECTION:

11.3.1 The Inspector shall verify that the Material Organization is on the NASL.

11.3.2 The Inspector shall inspect in accordance with the Purchase Order requirements found on the Receipt Traveler (Exhibit 61), including a visual and dimensional inspection. Receiving inspection shall be documented in accordance with FMP2A1.

11.3.3 The Inspector shall record the serial number of the measuring instruments and/or gages used.

11.3.4 The Inspector shall handle items in accordance with Section 14.

11.3.5. The Inspector shall confirm receipt of CMTR for Code items. The Manager, Quality reviews and approves CMTRs and other supplier documentation.

11.3.6 The Inspector shall process nonconforming material in accordance with Section 16 of this Manual.

11.4 INSPECTION DURING MANUFACTURING:

11.4.1 The Machine Operator is responsible for checking material being processed in his/her assigned area. He/she is also responsible for the maintaining of the heat and/or lot number, the piece serial number on parts during processing. Any re-marking of identification shall be verified by the Inspector. The Inspector shall inspect the material after the operation is complete, and indicate acceptance of the operation by signing the Work Order.

11.4.2 Should a nonconformance be identified, the Machine Operator shall notify the Inspector. Nonconforming material shall be processed in accordance with Section 16 of this Manual.

11.4.3 Weld Shop Inspection

11.4.3.1 The Inspector shall be responsible for the following inspection functions and, upon approval, sign and date the Weld Order (Exhibit 39) and for Code items the ITR.

Specific duties of the Inspector include:

A. Verification of part markings.

B. Inspection of the material for dimensional correctness and cleanliness; visual inspection of the base metal, including weld joint edges, for soundness and absence of unacceptable defects.

C. Verification that the filler metal(s) used conforms to the Welding Procedure Specifications, and that the filler metal(s) have not been damaged by rough handling or improper storage.

D. Verification that joint fit up (i.e. root opening, tacking, cleanliness, mismatch of edges, etc.) is within proper tolerances. Tack welds to be incorporated in the weld shall be visually examined. Unacceptable tack welds shall be removed.

E. Verification that the approved procedures/revisions are being followed by periodically checking in-process welding.

F. Verification that required pre-heat and post-weld heat treatment are performed correctly, and that interpass temperature requirements are adhered to. Upon approval, signs and dates the Weld Order and post-weld heat treat time-temperature charts if applicable.

G. Inspection of the finished weld for compliance to engineering drawings with respect to size, length, and location; verification that welds have been completed in accordance with the Code, and any additional contractual requirements.

H. Inspection of workmanship with respect to the contour of the weld (i.e. surface, surface defects, craters, undercut, overlapped edges, cracks, lack of penetration, etc.) per FMP 5B2, and verification that the welder's or weld operator's identification symbol is stamped adjacent to fabrication welds. When this is not possible, the welder/weld operator shall be identified on the Weld Order.

I. Process nonconforming weldments in accordance with Section 16 of this Manual.

11.5 SEMIFINISHED AND FINISHED INSPECTION:

11.5.1 Inspectors are responsible for inspection of sub-assemblies, finished items, and semi-finished items.

1. Items shall be inspected visually and dimensionally, to the engineering drawing, to ensure that they meet drawing requirements.

2. Items shall be checked to ensure they have been properly identified by the heat and/or lot number, piece serial number, and material identity.

3. Items with minimum wall requirements shall be inspected to verify the minimum wall thickness dimensions. The actual wall thickness shall be recorded on the Minimum Wall Thickness Report (Exhibit 65).

4. The Inspector shall verify completion of requirements, and for Code items indicate approval by signature and date on the ITR. He/she shall record the serial number of the gages and measuring instruments. He/she shall also sign the Work Order Traveler (Exhibit 60) and attach it to the item.

5. Nonconforming items shall be processed in accordance with Section 16 of this Manual.

11.6 ASSEMBLY, TESTING AND FINAL ASSEMBLY INSPECTION:

11.6.1 Inspectors are responsible for:

1. Witnessing the testing of assembled product.
2. Inspection of assembled and tested product.
3. Assuring that pressure gages used in hydrostatic testing are within calibration limits during the test; as specified in Section 13 of this Manual.

11.6.2 The Inspector shall witness:

1. Hydrostatic Tests
2. Seat Leak Tests
3. Diaphragm-to-Case Leak Tests
4. Operational Tests

5. Disc Hydro Tests (if applicable)
6. Valve Closure Test
7. Additional tests, as specified on the assembly documentation

11.6.3 *All Code required* Hydrostatic Tests shall be witnessed by the ANI, in accordance with Paragraph 12.2.4 of this Manual.

11.6.4 Upon completion of testing, the Inspector shall visually inspect each item to further assure conformance to the APR (Exhibit 41), the Assembly Work Order (Exhibit 28), and the Engineering Drawing. He/she indicates approval by signature and date on the ATR (Exhibit 3).

11.6.5 Nonconforming parts or assemblies shall be processed in accordance with Section 16 of this Manual.

11.7 COMMERCIAL GRADE ITEM DEDICATION:

Verification of critical characteristics shall be performed per FMP 2K27.

11.8 RECORDS:

11.8.1 Records shall, at a minimum, identify:
1. Item inspected
2. Date of inspection
3. Inspector
4. Type of observation
5. Results or acceptability
6. Reference to information on action taken in connection with nonconformances
7. M&TE identification number used during inspection
8. Test procedure and revision level.

11.9 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)
1. FMP 2A1 - Raw Material Inspection Procedure.
2. FMP 2Q14 – Nuclear Order Processing System - Processing of Manufacturing Documentation.
3. FMP 2Q16 - Nuclear Order Processing System - Assembly, Boxing and Shipping.
4. FMP 5B2 - Visual Inspection Requirements for Weldments
5. FMP 2K27 – Control of Commercial Grade Items to be Dedicated for Use in Nuclear Safety-Related Applications

TEST CONTROL

12.0 SCOPE: To specify responsibilities and requirements necessary to ensure that tests required by the Code and the Design Specification meet the requirements of the Code and the Customer Specification, and that such tests are identified and documented.

12.1 RESPONSIBILITIES:

12.1.1 The Manager, Quality shall ensure that the test times, pressures and acceptance criteria, as applicable, are included on the ATR (Exhibit 3) which accompanies the item during testing. The Manager, Quality is also responsible for assuring that test results have been documented, and that test results meet the test procedures specified on the ATR and APR (Exhibit 41). Test records on the ATR shall include:

1. Item tested
2. Date of test
3. NV2 Assembler/Tester and observer (if applicable)
4. Type of test
5. Results and acceptability
6. Action taken in connection with any NMDRs
7. Serial number of the pressure gages used

12.2 TESTING:

12.2.1 Valve assemblies shall be subjected to a hydrostatic test, a seat leak test or valve closure test (if applicable), and a functional test to ensure pressure integrity and proper operation of the valve assembly. Pressure boundary items shall be subjected to a hydrostatic test.

12.2.2 Test times, pressures, and acceptance criteria shall be in accordance with the FMP or FGS specified on the APR and ATR. A copy of the procedure shall be readily available to test personnel.

12.2.3 Personnel performing assembly and testing shall be qualified. Personnel qualification for assembly and test shall be in accordance with Section 2 of this Manual.

12.2.4 Hydrostatic tests must be witnessed by an Inspector. Hydrostatic tests on valve assemblies and pressure boundary items greater than 4 inch nominal valve size must be witnessed by the ANI. The ANI will indicate by placing a "hold" point on the *ITR/*ATR if he/she wishes to witness hydrostatic tests on valve assemblies and pressure boundary items 4-inch nominal valve size or less. The ANI's signature on the Code Data Report shall indicate his/her review of the ATR for items which he/she did not witness. Both the Inspector and the ANI must indicate their witnessing of the test on the applicable ATR by signature and date.

12.2.5 Gages used for hydrostatic testing shall be calibrated in accordance with Section 13 of this Manual. Analog gages shall have a range at least 1.5 times but no more than 4 times the test pressure. Digital gages may be used without range restriction provided the combined error due to calibration and readability does not exceed 1% of the test pressure.

12.2.6 Nonconformances shall be processed in accordance with Section 16 of the Manual.

CONTROL OF MEASURING AND TEST EQUIPMENT

13.0 SCOPE: To establish the actions and requirements necessary to assure that inspection gages, measuring and test equipment used in manufacturing and inspection activities affecting the quality of an item, are calibrated and properly adjusted at specified intervals to maintain accuracy within necessary limits, to meet the requirements of the Code and Appendix B to 10 CFR Part 50.

13.1 GENERAL:

13.1.1 Calibration of all devices is the responsibility of the Quality Control Manager:

13.1.2 Personal and Company-owned measuring gages, pressure gages, tools, and other measuring instruments used in manufacturing and inspection activities affecting quality shall be calibrated against certified measurement standards, traceable to national standards when such standards exist. If such standards do not exist, the Quality Control Manager shall determine the standard to be used.

13.1.3 Gages and measuring instruments shall be identified by marking with a unique control number; calibration records shall be established.

13.1.4 Calibration frequency of equipment will be in accordance with the appropriate FMP. Calibrations shall be performed in accordance with the latest procedure revision in effect on the date of calibration and identified on the calibration record.

13.1.5 Lost gages shall be considered as out of calibration and handled in accordance with Section 13.8.

13.2 DIMENSIONAL INSPECTION GAGES:

13.2.1 Inspection gages, measuring and test equipment shall be properly stored when not in use.

13.2.2 Individually owned inspection gages, measuring and test equipment used for product acceptance shall be calibrated when removed, and again when brought onto the premises, per FMP 2H2. When an Inspector leaves his/her position, the calibration status of his/her personally owned inspection gages and measuring and test equipment will be verified and documented per Paragraph 13.2.3.

13.2.3 Inspection gages, measuring and test equipment shall be calibrated by the Quality Control Technician or approved supplier on the NASL in accordance with FMP 2H2.

13.2.4 The Quality Control Technician is responsible for calibrating inspection gages, measuring and test equipment by the calibration due date. Calibration records for inspection gages, measuring and test equipment are identified by the month due for calibration. Prior to the beginning of the month, the Quality Control Technician will determine which gages and measuring instruments are due for calibration that month. Following calibration, the Quality Control Technician shall apply a label to each gage and measuring instrument, showing the next calibration due date.

13.3 SUBCONTRACTED CALIBRATION

Master inspection gages, measuring and test equipment, used to calibrate other inspection gages, measuring and test equipment, shall be calibrated, at intervals specified in an FMP, by calibration service suppliers using standards traceable to national standards. The Quality Control Manager is responsible for review and acceptance of this calibration which shall contain the information required in Paragraph 13.6. Following acceptance, the Quality Control Technician shall apply a label to each gage or measuring instrument showing the next calibration due date.

13.4 CALIBRATION OF OTHER EQUIPMENT:

13.4.1 Heat treating instruments, thermocouples, recorders, controllers, and weld rod ovens shall be calibrated by either the Quality Control Manager or an outside source. A calibration status label shall be applied to the instrument, recorder, controller, or oven and calibration records will be maintained by the Quality Control Manager.

Welding machines in use will be calibrated by an Electrician. A calibration status label shall be applied to the welding machine and, calibration records will be maintained by the Quality Control Manager.

Hardness testers will be calibrated by an outside calibration service or by hardness test blocks per FMP 2H2. A calibration status label shall be applied to the hardness tester and calibration records will be maintained by the Quality Control Manager.

NDE equipment shall be calibrated by the Quality Control Manager or a supplier on the NASL. A calibration status label shall be applied to the NDE test equipment when applicable.

13.5 ASSEMBLY AND TEST EQUIPMENT:

13.5.1 The Inspector is responsible for assuring that pressure gages used for hydrostatic shell testing are calibrated for accuracy over their ranges against plant transfer pressure standards (calibrated master gage) before and after each test or series of tests not to exceed 2 weeks. In addition, inspection personnel are responsible for maintaining a log for each pressure gage; in which they will also record the Company or piece serial number of each item tested with that gage. Completed log sheets shall be retained for a minimum of one full calibration cycle of the transfer standard.

13.6 RECORDS FOR CALIBRATION:

13.6.1 Requirements for Records as well as calibration frequency are specified within the appropriate FMP.

13.7 MEASURING AND TEST EQUIPMENT FOR DESIGN VERIFICATION

Measuring and test equipment used for design verification shall be controlled by ES 243.

13.8 MEASURING AND TEST EQUIPMENT FOUND OUT OF CALIBRATION:

13.8.1 The unique control numbers of gages used for inspections, examinations, and tests for activities affecting quality shall be recorded in a gage log.

13.8.2 For traceability purposes, the Quality Control Manager will create an inspection gage recall file including the Marshalltown Gage Log, ITR, ATR, and other documentation as applicable. These documents will be retained in accordance with Section 18 to assure that the calibration frequency period of gages and measuring instruments referenced is adequately covered, and to allow recall of suspect items, if necessary.

13.8.3 When discrepancies in measuring and testing equipment are found during calibration, the Quality Control Technician shall document the nonconformance using an NMDR. He/she shall notify the Quality Control Manager who will evaluate the nonconformance, document the gage disposition on the NMDR.

13.8.4 The Quality Control Manager shall consider the significance of the out of calibration condition, and if determined to be not significant shall require no further investigation into the gage recall file. The results of this evaluation shall be recorded on the NMDR in accordance with Section 16, and the NMDR shall be retained in the shop floor control system. Lost gages shall not be considered a 'not significant' out of calibration condition.

13.8.5 For relevant out of calibration conditions, the Quality Control Manager shall review the inspection gage recall file from the current date back to the last date of valid calibration to identify any items which were inspected using the gage. He/she shall list these items on the NMDR and perform the disposition. The items listed on the NMDR shall be considered as nonconforming until the Quality Control Manager completes a technical evaluation to determine the acceptability of each. The results of this evaluation shall be recorded on the NMDR in accordance with Section 16, and the NMDR shall be *created and* retained *in Oracle*. In the event a potentially nonconforming item has been shipped, the Manager Quality shall notify the customer in accordance with Section 16. Fisher Controls does not perform periodic checks of calibrated gages.

13.9 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2H2 - Procedure for Control and Calibration of Gages, Measurement Equipment and Examination Equipment.

Engineering Standards (ES)

1. ES 243 – Control Standard for Calibration and Use of Research and Engineering Lab Test and Measuring Equipment

HANDLING, STORAGE, PRESERVATION AND SHIPPING

14.0 **SCOPE:** To specify responsibilities and requirements to assure the control of handling, preservation, storage, cleaning, packaging, and shipping of items complies with Code and Customer Specifications.

14.1 **GENERAL:**

14.1.1 Standard handling, preservation, storage, or shipping procedures are required and shall be prepared and distributed in accordance with Section 5 of this Manual and FMP 11A9.

14.1.2 If special handling, preservation, storage, or shipping procedures are required, they will be prepared in accordance with Section 5 of this Manual and referenced on the ITR or ATR.

14.2 **HANDLING:**

14.2.1 Items shall be protected against damage throughout the manufacturing cycle. Devices such as wooden skids, and other protective methods shall be used to protect finished machine surfaces.

14.2.2 Contractual requirements for special handling shall be specified in the appropriate documentation for the valve part manufactured.

14.2.3 Areas of manufacturing and inspection shall have the necessary equipment (i.e. lift trucks, hoists, etc.) to properly handle Code items. Equipment operators shall be trained in the proper operation of their equipment.

14.2.4 Preventive maintenance programs, as appropriate, shall be applied to handling and lifting devices to ensure proper and safe operation to preclude damage to items.

14.2.5 The Value Stream Representative shall requisition material from the stock location when items are to be processed.

14.2.6 The Supervisor (Manufacturing) is responsible for the proper storage, handling, identification and preservation of welding materials; both before and after release of the material to the weld shop. Welding material shall be controlled in accordance with Section 10 of this Manual.

14.2.7 After Final Inspection, the Inspector shall:
1. Attach a Work Order Traveler (Exhibit 60) to each acceptable item.
2. Send the item to the stockroom designated by the Work Order Traveler.

14.2.8 After Receiving Inspection of finished items, the Inspector shall:
1. Attach a Receipt Traveler (Exhibit 61) to each acceptable purchased Item.
2. Send the item to the stockroom designated by the Receipt Traveler.

14.2.9 The Stock Selector shall place parts in the designated stockroom.

14.2.10 The *Manger Nuclear Value Stream* shall:
1. Send the Assembly Work Order to the Name Plate Stamper.
2. Fill required items per the Assembly Work Order.

3. Deliver items to the verification staging area.
4. Notify Manager, Quality that items are ready for verification.

14.2.11 When ready for release to assembly, the Value Stream Representative will present the Assembly Work Order (Exhibit 28) or Shipping Pick List (Exhibit 29) and associated support documentation (i.e. APR, ATR, Drawing) to the Manager, Quality for review. The Manager, Quality reviews the Assembly Work Order and associated support documents and returns them to the Value Stream Representative for release to assembly.

14.2.12 Following assembly, the Inspector shall:
1. Verify correctness of the nameplate(s) (Exhibit 82).
2. Send the Work Order and the ATR (Exhibit 3) to the Manager, Quality.

14.2.13 Supervisor (Manufacturing) shall monitor the proper application of handling practices.

14.2.14 Nonconformances due to handling shall be processed in accordance with Section 16 of this Manual.

14.3 PRESERVATION, CLEANING, AND STORAGE:

14.3.1 Prior to final inspection, machined items shall receive an appropriate cleaning/degreasing to remove residual coolant, cutting oil, and chips.

14.3.2 Prior to storage, items shall be protectively coated, as necessary, by means of paint, oil spray, etc. to ensure protection against corrosion or other surface deterioration during storage.

14.3.3 Items shall be stored to prevent damage or loss of identification.

14.3.4 Inspectors shall ensure that preservation, and storage methods as required by this Manual and/or contractual requirements have been applied.

14.3.5 Cleaning operations shall be performed using FMPs or WMPs developed in accordance with Section 5 of this Manual, or as specified in the MPR or APR.

14.3.6 Items found to be nonconforming due to improper, cleaning, preservation or storage methods shall be processed in accordance with Section 16 of this Manual.

14.4 PACKAGING AND SHIPPING:

14.4.1 The Supervisor (Manufacturing) shall ensure that proper packaging and crating methods are utilized in accordance with the applicable FMP and contractual requirements.

14.4.2 Prior to crating, items will be visually inspected by a Packager to verify that each item has the correct serial number. The Packager shall include an instruction sheet and packing list with each shipment.

14.4.3 The Supervisor (Manufacturing) is responsible for assuring that all Code Items are protectively packaged and labeled in accordance with the requirements of the APR

(Exhibit 41), and FMP 2Q16. He/she shall indicate completion of these actions on the ATR by signature and date.

14.4.4 Code Items shall not be shipped until released by the Manager, Quality. This shall be indicated by his/her signature on the ATR.

14.4.5 Nonconformances developed during packaging and shipping operations shall be handled in accordance with Section 16 of this Manual.

14.5 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2Q16 - Nuclear Order Processing System - Assembly, Boxing and Shipping.
2. FMP 11A9 – Packaging of Parts or Components Prior to Shipment

INSPECTION, TEST AND OPERATING STATUS

15.0 SCOPE: To outline activities and requirements which assure that the acceptability and status of items are maintained throughout the receiving, manufacturing, and assembly processes.

15.1 RESPONSIBILITIES:

15.1.1 The Manager Quality and the ANI shall review process documentation (PPR, MPR, ITR, APR, ATR) and applicable drawings for items to be Code Stamped (excluding material supplied as a Material Organization). The ANI shall determine mandatory hold points and affix them on the ITR prior to the start of fabrication or any special processes, or the ATR prior to release for assembly. The ANI signs and dates the ITR or ATR to indicate this review.

15.1.2 Consent to waive customer specified hold points shall be recorded by the Nuclear Project Manager or Manager Quality prior to continuation of work beyond the designated hold point.

15.2 RECEIVING:

15.2.1 The Receipt Traveler (Exhibit 61) is used to record and transmit inspection, identification, and/or processing requirements regarding materials.

1. Approval of these documents prior to use by the Manager, Quality signifies approval of the requirements and instructions included in these documents.

2. The appropriate receiving and inspection personnel's signature on these forms signifies completion of, and conformance to, the requirements or instructions included on these forms.

3. The approval of the material status is performed electronically by the Quality Control Manager.

4. Nonconformities shall be handled in accordance with Section 16 of this Manual.

15.3 MANUFACTURING-MACHINING, NDE, WELDING (Code Items):

15.3.1 The ITR is used to identify specific Code and/or customer required processing, inspection, and test requirements for items during manufacturing. The Work Order (Exhibit 32) specifies required processing operations in a sequential manner.

1. Approval of the ITR by the Manager, Quality prior to use signifies approval of the requirements and instructions included on this form.

2. Verification of Witness/Hold Points by the ANI's or Customer's signature on the ITR signifies acceptance and completion of the operation witnessed.

3. The signature of the operator or examiner on this form signifies that the applicable tests, inspections, welds, and other operations have been completed.

4. The signature of the Inspector on this form signifies that applicable tests, inspections, and other operations have been performed properly and completed

satisfactorily in accordance with the drawings and procedures (including revisions) indicated.

4. Signature or stamp on this form from the Manager, Quality signifies approval of the information recorded, and verification that Code and Customer requirements have been satisfactorily completed.

5. Nonconformities occurring during operations shall be handled in accordance with Section 16 of this Manual.

15.3.2 For those items requiring NDE, the NDE Level I, II, or III is responsible for originating and including a Non-destructive Examination (NDE) Report (Exhibit 52), an Inspection Report of Radiography (Exhibit 79), or an Ultrasonic Test Report (Exhibit 81) with the Work Order.

1. The NDE Level II or NDE Level III shall signify satisfactory completion of non-destructive examination by signature on the appropriate NDE Report and on the ITR or Work Order.

2. Nonconformities developed during NDE operations shall be handled in accordance with Section 16 of this Manual.

15.3.3 The Supervisor is responsible for initiating a Weld Order (Exhibit 39) for welding performed on items.

15.3.3.1 The Welder or Weld Operator, and Inspector sign and date the Weld Order to signify satisfactory completion of the welding operation.

15.3.3.2 Nonconformities occurring during welding operations shall be handled in accordance with Section 16 of this Manual.

15.4 MANUFACTURING - ASSEMBLY:

15.4.1 The ATR (Exhibit 3) identifies specific processing, inspection, and test requirements for items being assembled.

1. Approval of this form by the Manager, Quality prior to use signifies approval of the requirements indicated.

2. Verification of Witness/Hold Points by the ANI's or Customer's signature signifies acceptance of the satisfactory completion of the operation witnessed.

3. Upon satisfactory completion, the NV2 Assembler/Tester shall sign and date the applicable operation on the ATR.

4. The signature and date of the Inspector on this form signifies that tests, inspections, and other operations indicated have been performed properly and completed satisfactorily in accordance with the drawings and procedures (including revisions) indicated.

5. Approval from the Manager, Quality on this form signifies approval of information recorded and verification that Code and/or Customer requirements have been satisfactorily completed.

6. Nonconformities found during assembly operations shall be handled in accordance with Section 16 of this Manual.

15.5 NONCONFORMING MATERIAL DISPOSITION REPORT (NMDR):

15.5.1 The creation, use, and distribution of the NMDR (Exhibit 19) is described in Section 16 of this Manual.

15.6 CODE STAMPING:

15.6.1 Following certification, the Manager, Quality is responsible for submitting the Code Data Report to the Authorized Nuclear Inspector (ANI); along with the Quality Assurance Records as requested by the ANI. When satisfied that the Code Item complies with the Code requirements, the ANI shall authorize the application of the ASME Code and NB Stamps on the nameplate. After verification that the nameplate has been attached to the correct code item the ANI signs the Code Data Report.

15.6.2 The ANI witnesses the attachment to or inclusion of the nameplate with the Code Items and signs and dates the Assembly Test Report (ATR) (Exhibit 3).

15.6.3 If because of size or other considerations the nameplates cannot be directly attached to the component, the Manager Quality may secure the nameplate to the component in a manner acceptable to the Authorized Inspection Agency and apply a unique identification mark to the component that will serve to identify the component with the appropriate Data Report and shall be approved by the ANI.

15.7 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2Q14 – Nuclear Order Processing System – Processing of Manufacturing Documentation.
2. FMP 2Q16 - Nuclear Order Processing System - Assembly, Boxing, and Shipping.

NONCONFORMING MATERIALS AND ITEMS

16.0 SCOPE: To specify the requirements and responsibilities necessary to ensure correct processing of Nonconforming items or activities.

16.1 RESPONSIBILITIES:

16.1.1 The Manager Quality is responsible for assuring conformance to the requirements included in this Section and FMP 2K29.

16.1.2 If items are determined to be nonconforming to the Code the Inspector, or applicable Quality Assurance Representative *with demonstrated competence in the specific area they are evaluating, an adequate understanding of the requirements, and access to pertinent background information*, is responsible for generating a Nonconforming Material Report (Exhibit 10).

16.1.2.1 If non-ASME Code, Safety Related items are determined to be nonconforming, the Inspector, or applicable Quality Assurance Representative, is responsible for generating a Nonconforming Material Report (Exhibit 10)..

16.1.3 The Inspector, or applicable Quality Assurance Representative, is responsible for attaching a Nonconforming Material Report and if feasible, have the nonconforming item moved to a segregated nonconforming area.

16.1.4 The Nuclear Project Manager is responsible for proper disposition of contractual nonconformities.

16.1.5 Nonconformances will be dispositioned by the Quality Assurance Representative. When deemed necessary, the Quality Assurance Representative shall request that a Material Review Board be convened to determine disposition on a nonconforming item.

16.1.6 The Manager Quality is responsible for making each Nonconforming Material Disposition Report (NMDR - Exhibit 19) available to the ANI prior to final documentation.

16.1.7 The QA Docs Analyst is responsible for reviewing completion of operations on the NMDR and indicates approval on the NMDR at the end of the Work Order.

16.2 DISPOSITION:

16.2.1 Rework (Used Interchangeably with Repair)
The Quality Assurance Representative shall enter the proper disposition, including each operation needed to correct the nonconforming condition on the NMDR (Exhibit 19), and approve. For Code items the nonconformance number shall be recorded on the ITR, or ATR as applicable.

16.2.1.1 For Code items the Quality Assurance Representative is responsible for submitting each NMDR (Exhibit 19) to the ANI for his/her concurrence, signature, date, and establishment of hold points before rework begins.

16.2.1.2 The Inspector, NDE Level II, or NDE Level III, as applicable, shall indicate the satisfactory completion of a rework operation by entering his/her approval.

The ANI indicates witnessing of hold points by placing his/her signature and date on the NMDR (Exhibit 19) for that operation. The NMDR shall remain with the nonconforming item, together with the other processing documentation, and will become part of the final documentation to be presented to the ANI for review and acceptance.

16.2.1.3 Reworked items shall be re-inspected to original requirements of the valve part.

16.2.3 Scrap

16.2.3.1 When items are rejected during manufacturing operations, including rework, and are to be scrapped, the Quality Assurance Representative shall indicate this disposition on the NMDR (Exhibit 19) and approve.

16.2.3.2 The NMDR, and other applicable receiving documentation, shall be forwarded to the Value Stream Representative to initiate re-ordering of the item and creation of new documentation.

16.2.3.3 The Quality Assurance Representative is responsible for tagging the scrapped items with the copy of the NMDR which is completed by the Quality Assurance Representative, and ensuring that the items are moved to a scrap flat located in the appropriate area.

16.2.4 Use-As-Is

16.2.4.1 When nonconforming items or activities are being considered for Use-As-Is disposition, the Quality Assurance Representative shall consult and obtain approval from the Product Engineer. (This is the Engineer who has responsibility for the product in question). For Code items the nonconformance number shall be recorded on the ITR, or ATR as applicable.

16.2.4.2 If the Product Engineer rejects the NMDR, it is returned to the Quality Assurance Representative stating that a disposition other than Use-As-Is must be made.

16.2.4.3 If the Product Engineer concurs with the proposed Use-As-Is disposition, he/she shall provide the technical justification, indicate such by approval on the NMDR. The Quality Assurance Representative shall then forward the NMDR to the Qualification Engineer responsible for reviewing the NMDR Use-As-Is disposition with respect to Code and customer design and/or qualification requirements. If the Qualification Engineer accepts this disposition, he/she shall indicate approval on the NMDR and return it to the Quality Assurance Representative. The original copy of the NMDR shall become part of the final documentation.

If the Qualification Engineer rejects the Use-As-Is disposition, he/she shall so note on the NMDR and return to the Quality Assurance Representative for further disposition.

16.2.4.4 Use-As-Is resolutions may require seismic, design, or qualification report revisions in accordance with Section 4 of this Manual and ES 98. A Reconciliation of Nonconformances (Exhibit 12 or 87) for each Design Report, identifying accepted NMDRs for the applicable items, may be included as part

of the Design Report. If the Design Report has been certified, re-certification by the Registered Professional Engineer is required on this Reconciliation of Nonconformances.

16.2.4.5 For Code items the Quality Assurance Representative is responsible for submitting each NMDR (Exhibit 19) to the ANI for his/her concurrence, signature, and date.

16.3 MATERIAL REVIEW BOARD:

16.3.1 The Material Review Board shall be made up of a representative of the following functional departments:
1. Quality Assurance
2. Manufacturing

16.3.2 In addition, representatives of the following areas may be called upon to resolve disposition disputes:
1. Engineering
2. Application Engineering
3. Nuclear Business Unit
4. QP&S
5 Nuclear Value Stream

16.3.3 The decision regarding the disposition of the nonconforming item in question must be reviewed by the Material Review Board or qualified *individual n*uclear *dispositioner designated by the Quality Engineering Manager*.

16.3.4 The Quality Assurance Representative, and ANI for rework and Use-As-Is, authorize the removal of the Nonconforming Material Report from the item after it is controlled by the appropriate process document in accordance with Paragraphs 16.2.1 through 16.2.3.

16.3.5 The Material Review Board shall review nonconformances to identify potential deviations that require investigation for 10 CFR Part 21 reporting.

16.4 NONCONFORMING SUPPLIERS:

The Manager Quality shall identify in writing to the Manager Production any supplier he/she feels is unable to provide acceptable material or services, or where corrective action has been ineffective in accordance with the requirements of this Manual. The Manager Quality shall then remove the nonconforming supplier from the NASL and determine the effect on previous orders.

16.5 REPORTING DEFECTS AND NONCOMPLIANCE IN PARTS, COMPONENTS, OR PRODUCTS SUPPLIED IN ACCORDANCE WITH THE PROVISIONS OF TITLE 10, CHAPTER 1, CODE OF FEDERAL REGULATIONS – ENERGY, PART 21:

16.5.1 Scope
Title 10, Chapter 1, Code of Federal Regulations - Energy, Part 21 (10CFR Part 21) specifies the actions required to notify the Nuclear Regulatory Commission and users of equipment installed in nuclear power plants when defects or failures to comply with the Atomic Energy Act of 1954, as amended, are discovered.

Since Fisher Controls may not be aware of each and every application or system design, it is the corporate policy to inform affected purchasers according to the requirements of 10CFR Part 21 Section 21.21 (b). In the event that Fisher Controls has the ability to evaluate a deviation, the requirements of 10CFR Part 21 Section 21.21 (a) shall be met.

16.5.2 Procedure

Each and every person has the right and responsibility to bring forth concerns relative to potential defects and failures to comply. These concerns can be passed by email, telephone, a written note or letter, or verbal communication to your immediate supervisor or any member of management. That person, once notified of the potential concern(s), must contact the Manager, Quality of their respective location for follow up and possible investigation. The Manager, Quality has the responsibility to investigate the concern, involving the resources of Engineering, Order Entry, Manufacturing and other departments as may be appropriate.

An investigation shall be performed, and documented per FMP 2K9, with assistance by the Product Safety Committee. Then, if it is determined that a deviation, failure to comply, or significant breakdown of the nuclear quality program may exist, the Manager, Qualification Engineering shall receive written notification of the discovery and prepare a Fisher Information Notice (FIN). Upon completion, the Manager, Qualification Engineering will forward the FIN to Director, Quality-Valve Division for distribution. Upon receipt, Director, Quality-Valve Division will distribute to purchasers, or affected licensees. Distribution shall be made via registered mail and shall be accomplished within 5 working days of the notification of the Manager, Qualification Engineering. NRC notification shall also consist of FAX submittal or email to the NRC Document Control Desk per Part 21 § 21.5 and Part 50.55 (e)(5)(i). http://www.nrc.gov/reading-rm/doc-collections/cfr/part021/part021-0005.html

The evaluation of the deviation or failure to comply must be completed within 60 days of discovery.

If Fisher Controls does not have the capability to perform the evaluation to determine if a defect, or failure to comply, exists, the purchasers, or affected licensees, will be notified within 5 working days of the determination.

If the evaluation of the deviation, or failure to comply, can not be completed within 60 days of discovery, an interim report must be submitted to the NRC by the Director, Quality – Valve Division. The interim report should describe the deviation or failure to comply that is being evaluated and state when the evaluation will be completed.

Within 5 days of the completion of the evaluation, the Director, Quality – Valve Division must be informed. The Director, Quality – Valve Division or designee, shall submit initial notification by facsimile (301) 816-5151 (and verify receipt by calling the NRC Operations Center) or telephone (301) 816-5100 to the NRC Operations Center within 2 days of being informed and written notification to the NRC and the purchasers, or affected licensees* within 30 days of being informed to the address listed 10 CFR 21 § 21.5.

The written notification shall be prepared by the Manager, Qualification Engineering and include the name and address of the Manager, Quality – Marshalltown, identification of

the basic component that contains the defect, identification of the vendor, nature of the defect, substantial safety hazard that could be or was created by the defect, the date that the information of the defect was obtained, the number and location of all such basic components in use or supplied to facilities subject to 10 CFR 21 to 10 CFR 50.55 (e), the corrective action, and advice given to purchasers. This report shall be forwarded to the Director, Quality – Valve Division for distribution.

16.5.2.1 The Director, Quality *Americas* shall maintain a current mailing list of North American Nuclear facilities and Fisher Representative Offices which service them.

16.5.3 Posting Requirements

16.5.3.1 Posting Requirements shall be in accordance with 10CFR21.6.

16.5.4 Maintenance of Records

Records of proceedings relating to the investigation of any deviations shall be retained by the Director, Nuclear Business Unit for a minimum of 10 years.

16.6 CORRECTIVE ACTION:

The Quality Assurance Representative shall monitor NMDRs for possible corrective action. If required, corrective action shall be implemented in accordance with Section 17 of this Manual.

16.7 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FGS 15B15.5 – Reporting of Potential Defects and Noncompliance in Accordance with 10CFR21, US Code of Federal Regulations
2. FMP 2K9 Procedure for Corrective Action
3. FMP 2K29 Processing of Nonconforming Materials and Items

Engineering Standards (ES)

1. ES 98 - Research & Engineering Procedure For Handling Nuclear Orders.

Regulatory Documents

1. Title 10, Chapter 1, Code of Federal Regulation-Energy, Part 21

CORRECTIVE ACTION

17.0 **SCOPE:** To specify the methods for obtaining and verifying required corrective action in regards to the Code, Company or Customer requirements, and/or the requirements of this manual from suppliers or Company personnel. Conditions adverse to quality shall be identified promptly and corrected as soon as practicable. In cases of a significant condition adverse to quality, the cause of the condition shall be determined and corrective action taken to preclude recurrence.

17.1 **NONCONFORMITIES:**

17.1.1 A request for corrective action, due to a significant or recurring nonconformity caused by a Company employee, system, process or supplier, may be originated by any employee discovering or becoming aware of the nonconformity.

17.1.2 The originator shall initiate a Corrective Action Request (CAR) form (Exhibit 5), sign, date, and forward to the Manager Quality for approval.

17.1.2.1 If the nonconformity occurs due to a supplier problem, the Manager Quality determines if this problem requires corrective action. If so, he/she shall describe the nonconformity on a CAR form. If no corrective action is required, the item shall be dispositioned in accordance with Section 16 of this Manual.

17.1.3 The Manager Quality shall indicate approval of the request for corrective action by signature and date, and shall indicate a required reply date (normally 2 weeks after approval of the request for corrective action for personnel within the Company; six weeks for suppliers). If the request for corrective action is disapproved, the Manager Quality shall reply to the originator explaining the reason for disapproval (i.e. nonconformity is currently being corrected due to audit finding, etc.). Approved CAR forms shall be forwarded to the Manager whose department is responsible for the nonconformity.

17.1.3.1 If a supplier's reply to a corrective action request is rejected, or if the supplier fails to reply within six weeks, the Manager Quality shall notify the supplier. Failure to respond will be cause for discontinuing use of that supplier until an adequate response is received.

17.1.3.2 When the use of a supplier is to be discontinued, the Manager Quality shall remove the supplier in question from the NASL and will evaluate all orders past and present *after the last evaluation*.

17.1.3.3 If evaluation for 10CFR Part 21 reportability is indicated, the CAR shall be processed in accordance with Paragraph 16.5

17.1.4 The department Manager or supplier responsible for the nonconformity shall determine and implement the corrective action required, both immediate and to preclude recurrence, and shall report such action on the CAR form. The corrective action shall define the cause of the nonconformity, action taken to prevent reoccurrence, and schedule of corrective action implementation to the Manager Quality.

17.1.5 The Manager Quality shall verify and determine the adequacy of the corrective action taken. For significant conditions adverse to quality, the Manager Quality shall also verify corrective action to preclude repetition.

17.1.6 If the corrective action is inadequate, the CAR form shall be returned to the appropriate Manager or supplier with an explanation for rejection and a recommendation for further corrective action.

17.1.7 The Manager Quality shall determine if the corrective action reply requires further management review, and if so, shall forward the completed and approved CAR form to the appropriate individuals for review. As a minimum, the corrective action reply shall be distributed to the affected department Managers.

17.1.7.1 The identification, cause, and corrective action for significant conditions adverse to quality shall be documented and reported to appropriate levels of management. Completion of corrective actions shall be verified.

17.1.8 The Manager Quality shall maintain a file of completed CAR forms, and provide access to the ANI upon request.

17.1.9 Corrective action requests, approvals, implementation, verification, and records shall be controlled in accordance with FMP 2K9.

17.2 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2K9 - Procedure for Corrective Action.

QUALITY ASSURANCE RECORDS

18.0 SCOPE: To outline the requirements for creating and maintaining a Quality Assurance Records File, and to specify the contents of the file in accordance with the Code.

18.1 RESPONSIBILITIES:

18.1.1 The Manager Quality is responsible for assuring conformance to the requirements of this Section of the Manual.

18.1.2 The Manager Quality is responsible for the establishment, administration, and maintenance of the Quality Assurance Records File.

18.2 RECORDS ADMINISTRATION:

18.2.1 Records System

18.2.1.1 Code required Lifetime and Non-permanent Quality Assurance records are defined in FMP 2K25 by the Record Retention Schedule *and at a minimum records as defined in NCA-4134.17*.

18.2.1.2 Each document shall be validated as a record by the Manager, Quality prior to inclusion in the Quality Assurance Records File. Validation shall be shown by stamping or signing and dating each Quality Assurance Record.

18.2.1.3 Lifetime Quality Assurance Records and customer required records are transmitted to the Owner or the Customer prior to, or at the time of, Code Item shipment. Quality Assurance Records shall be transmitted using a common carrier with a tracking number that shall be filed by the Manager Quality.

18.2.1.4 The Company may contractually agree to maintain custody of Quality Assurance Records not transmitted to the Owner. Quality Assurance Records for which custody is maintained shall be administered and controlled as specified herein and in FMP 2K25.

18.2.2 Generation of Documents

The types of documents required for each Code Item are specified by the Code and the applicable PPR (Exhibit 22), MPR (Exhibit 18), or APR (Exhibit 41).

Nuclear Safety-Related items are certified on Manufacturer's Certification Nuclear Safety-Related Items (Exhibit 89).

All quality records shall be legible and identifiable to the product or process involved.

18.2.3 Index

A Quality Assurance Records Index (Exhibit 67) of Lifetime and Non-permanent records shall be developed by the Manager, Quality for each Code Item. The index shall include a description of the document, physical location of the document within the Quality Assurance documents system, and the retention time as shown on the Record Retention Schedule (FMP 2K25). The index shall be included in that portion of the Quality Assurance Records File, located in the Quality Assurance documentation area.

18.2.4 Distribution
The distribution of Quality Assurance records shall be limited to the submittal of applicable records to the Customer (Owner).

18.2.5 Identification
Records, including the indexing system, shall provide sufficient information such as heat and/or lot numbers, piece serial numbers, etc. to permit identification from the record to the items or activities to which it applies.

18.2.6 Corrected Information
Required corrections to records shall only be made by, or with the specific permission of, the individual or organization who originated the document. Overall review, approval, and validation shall be by the same authority as for the original document.
Corrections shall be made so as not to obliterate the original data. The preferred method of showing a correction is a single line out, initials, and date. Correction fluid shall not be used.

18.2.7 Use of Stamps
The use of stamps to show approval shall be controlled in accordance with FMP 2K24.

18.3 RECEIPT OF DOCUMENTS:

18.3.1 Receipt Control
Quality Assurance documents, whether initiated by suppliers, subcontractors, or internally, shall be received, approved (including approval of necessary corrections), and validated by the Manager, Quality, Inspector, or a Qualification Engineer. Similarly, documents shall be filed in a controlled manner either temporarily or permanently, as applicable.

18.3.2 Status
Documents shall be filed and maintained in such a manner that the status of the document is readily ascertainable at any time.

18.4 STORAGE, PRESERVATION, AND SAFEKEEPING:

18.4.1 The Quality Assurance Records File refers to a number of specific physical locations (i.e. Quality Assurance Documentation area, Research & Engineering drawing vault, Inspection area, Manufacturing Engineering area, etc).

Quality Assurance Records shall be stored, preserved, and kept safe in accordance with FMP 2K25.

18.5 RETRIEVAL:

During the manufacturing cycle, retrieval of documents from temporary files shall only be performed by members of the group responsible for the document in question. After shipment of a Code Item, retrieval of its Quality Assurance Records from the storage file shall only be performed by a member of the immediate group responsible for the file. When other departmental Company personnel require a Quality Assurance Record for review, the Quality Assurance Record shall be retrieved by a member of the group responsible for the storage file, and shall be returned to the storage file by a

member of the same group. Such reviews will be conducted in the immediate area of the storage file. The Quality Assurance Records File shall be accessible to both the ANI and the customer.

18.6 DISPOSITION:

Non-Permanent Quality Assurance Records shall be retained for at least the period of time specified by the Code or as contractually required, whichever is longer.

18.7 ARCHIVING:

Lifetime, Non-permanent, or other contractually required Quality Assurance Records, except radiographs, may be microfilmed or electronically stored to provide for dual storage.

18.8 REGISTRATION OF DATA REPORTS WITH THE NATIONAL BOARD:

When required by the customer, National Board Numbers shall be issued (sequentially, without skips or gaps of unused or duplication of numbers) after completion of the hydrostatic test or prior to the Certification of the Data Report if no pressure test is performed, and controlled by the Manager Quality. He/she shall maintain a log including the National Board Number, date issued, type of Code Symbol assigned, and the Company Order and Serial Number. He/she shall submit the original of the Code Data Report within 30 days of signing by the ANI to the National Board, and retain one copy for the Quality Assurance Records File. The registration forms must bear the signature, commission number, and endorsement(s) of the National Board Commissioned Inspector.

18.9 CERTIFIED MATERIAL TEST REPORTS (CMTR):

18.9.1 When required, the Manager Quality shall prepare a CMTR (Exhibit 75). The CMTR shall include the actual results of required chemical analyses, tests, and examinations. (When these analyses, tests, or examinations are subcontracted, the approved supplier's certification for the operation performed shall be furnished as an identified attachment to the CMTR.) The CMTR shall also include a report of weld repairs performed on material, as required by the Code. Radiographic film required for the examination of material, or of material repair welds, shall be included as part of the CMTR (except for those radiographs required for the testing of welding or brazing materials).

When specific times and temperatures (or temperature ranges) of heat treatments for materials are required by material specifications, they shall be reported. When specific times and temperatures (or temperature ranges) are not required by the material specification, a statement of the type of heat treat condition shall be reported. In any case, a statement of the minimum solution annealing temperature is adequate for austenitic stainless steels and high nickel alloys. Additionally, the times and temperature ranges of post-weld heat treatments of weld-repaired materials, as required by the fabrication requirements of the Code, shall be reported.

18.9.2 The CMTR shall be signed by Manager, Quality to certify that the contents of the report are correct and accurate, and that operations performed by the Company or subcontractors are in compliance with the requirements of the material specifications and the Code.

18.9.3 The CMTR for Code materials shall include the Company "NPT" Certificate number and expiration date. The discussion in Paragraph 18.9.1 relative to weld repair is not applicable to the upgrade of source material.

18.10 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2K24 - Control of Inspection Stamps.
2. FMP 2K25 - Control of ASME Section III, Division 1 Quality Assurance Records.

SURVEYS AND AUDITS

19.0 SCOPE: To specify the requirements and activities necessary for assuring that required Internal Audits and External Audits, surveys (code), and Commercial Grade Surveys are performed in accordance with the Code and Company Policy.

19.1 RESPONSIBILITIES:

19.1.1 The Manager Quality is responsible for assuring conformance to the requirements of this Section.

19.2 QUALITY ASSURANCE INTERNAL AUDITS:

19.2.1 The Manager Quality is responsible for the establishment of an annual Internal Audit for functions performed in accordance with this Manual and FMP 2K41. This audit shall be performed using a qualified Lead Auditor assigned by the VP Operations Americas. Auditors selected shall not have direct responsibilities in the area that he/she is auditing. This audit shall be conducted utilizing an Internal Audit Plan (Exhibit 73), prepared by the Lead Auditor, and shall include checklists which provide a review of applicable procedures and systems.

The Lead Auditor shall concur that the Auditors have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited, and shall sign and date the Audit Plan to document this concurrence.

19.2.2 Internal Audit Report

The Internal Audit Report (Exhibit 72) shall be prepared, signed, and dated by the Lead Auditor and shall contain, as a minimum, the following information:

1) Audit scope.
2) Auditors' names.
3) Persons contacted during the audit.
4) Summary of audit results, including a statement on the effectiveness of the program elements audited.
5) Description of any deficiencies, and requests for corrective action (see Paragraph 19.2.3).

The Internal Audit Report shall be reviewed and approved by the Manager Quality and the VP Operations Americas.

The Internal Audit Report shall be sent to the Manager Quality with copies to the Plant Manager, the Director, Quality *Americas*, and management of the audited departments.

19.2.3 Internal Audit Findings

Internal Audit Findings shall be documented and processed as corrective actions in accordance with Section 17 of this Manual.

The Lead Auditor is responsible for reviewing and approving the CAR, and for verifying that the indicated corrective action has been implemented. The Lead Auditor shall perform verification, and the results of such verifications shall be included in the Audit Finding Report.

If evaluation for 10CFR Part 21 reportability is indicated, the Manager Quality shall take action in accordance with Paragraph 16.6.

19.2.4 The Manager Quality shall maintain a file of Audit Reports, including recommended corrective action and re-audit results.

19.2.5 The Lead Auditor and Auditors who perform the Internal Audit shall be qualified and certified in accordance with Section 2 of this Manual.

19.3 EXTERNAL SURVEYS AND AUDITS:

External Audits and Surveys (code) for Material Organizations, Approved Suppliers of Source Material and Services, Commercial Grade Surveys for Suppliers of Subcontracted Services, and Audits for Suppliers of 10CFR Part 50 Appendix B items, are scheduled based upon the NASL, and performed in accordance with Section 7 of this Manual.

19.4 CUSTOMER / REGULATORY AGENCY / AIA AUDITS:

19.4.1 Results of audits and surveys (code) performed by customers and Regulatory Agencies shall be forwarded by the Manager Quality to the appropriate management level for review as required.

19.4.2 The Manager Quality shall accompany the ANIS when he/she conducts audits of the ANI and the Fisher MO activities.

19.5 MANAGEMENT REVIEW:

19.5.1 The Plant Manager, and other appropriate members of management, are regularly apprised of the status and adequacy of the Program through the following means:

1. The quarterly report by the Manager Quality is sent to the Plant Manager and Director, Quality *Americas*. Included in the report are:
   A. Significant problems impacting quality
   B. Returns, scrap, and rework performance for the quarter
   C. Corrective Action taken with suppliers
   D. Results of audits, surveys (code), and Commercial Grade Surveys conducted during the quarter.
2. Reports are given by the Manager Quality during staff meetings.
3. *Attendance at audit exit meetings with customers and Regulatory Agencies following their audits, and the review of their audit reports.*
4. *Annual Management Review of the Quality Program per FMP 2K35.*

19.5.2 Manager Quality presents the results of the Management Review Report from 19.5.1 to the President, Flow Controls for his review and assessing program adequacy and its effective implementation.

19.6 REFERENCE DOCUMENTS:

Fisher Manufacturing Procedures (FMP)

1. FMP 2K35 – Management Review
2. FMP 2K41 – Requirements for Performing and Reporting Results of Internal Audits for NQAM, QMSM, ATEX and PED

EXHIBIT INDEX

Listed below are the exhibits referenced in this Manual along with corresponding exhibit numbers and page revisions:

Note: Many forms are being converted into computer based forms and data files. The forms shown in the exhibits represent the information content required, but not necessarily the exact format of the form.

EXHIBIT 1 - ACKNOWLEDGEMENT OF RECEIPT

Fisher Controls

Acknowledgement of Receipt

FISHER

This is to certify that I have received the document(s) specified below and destroyed any superseded copies.

Please return this acknowledgement within 2 weeks of the date listed below. Failure to comply will result in removing you from our Controlled List.

George Baitinger
(Name-Please Print)

(Signature)

5/23/13
(Date)

Quality
(Department)

901
(Manual Number

SPECIFICATION	PAGE(S)	REVISION
Nuclear Quality Assurance Manual	All	Issue III Rev. 10, 05/15/2013

Please return signed document to:

George Baitinger
Manager, Quality
GRN

FAX: 641-754-2854

EXHIBIT 3 Page 1 of 3 – ASSEMBLY TEST REPORT

Page 1 of 2

FISHER CONTROLS INTERNATIONAL, LLC / ASSEMBLY TEST REPORT (FORM 3131 R)

Rep. Order		Item:	APR /ATR No	CSP-8446220-4-1	Rev. B
Oracle Sales		Line:	Issued By:	Pam Wynn	Date 08/09/18
Tag Number			Revised By	Pam Wynn	Date 09/28/18
Valve Serial No			Drawing No:		Rev.
Customer P.O			Hydro Gauge		
Size and Type					
Code	ASME B PVC, Sect. III, Div. 1	Year/Addenda	1998 Edition, 1998 Addenda	Class 2	N-Stamp YES

Sequence	Hold/Witness Points: Fisher	ANI	Customer	Owner	Check if Witnessed	Description	Procedure	Rev.	Amendment or APR Ref	Rev.
		X	X		X	ASSEMBLED HYDRO	FGS 4L1			
	X		X		X	SEAT LEAK	FMP 2X16			
	X		X		X	VALVE CLOSURE	FMP 2C2.11			
	X		X		X	OPERATIONAL	FMP 2C6			
	X		X		X	PAINT	WMP 8A1			
			X		X	FINAL INSPECTION				
	X		X		X	FINAL CLEANING	FMP 7X5			
					X	SEAL ENDS	FMP 10L2			
	X		X		X	PACKAGING	FMP 11A8			
		X			X	VERIFY PARTS PRIOR TO ASSEMBLY				
		X			X	ANI DOCUMENTATION REVIEW				
		X			X	ASME STAMP				
					X	QA RELEASE				
					X	CUT OFF NIPPLE PER DRAWING K-14468				
					X	MT/PT CUT AREA				

REVIEWED/APPROVED: (Q P & S)	Mark Weese	DATE 09/28/18
APPROVED: (QA for Appendix B Equip.)	Melody Gray	DATE 10/01/18
REVIEWED: (ANI / AI for ASME Sec. III Equip.)		DATE

See CSP-APR for procedure revisions (record revision used)

EXHIBIT 3 Page 2 of 3 – ASSEMBLY TEST REPORT

CSP-8446220-ATR-4-1, REV. B
Process Coded Parts

Rep. Order No.				Item No:		Valve Serial No:	
Part	X	Piece Serial No.	Heat No	Part	X	Piece Serial No.	Heat No.
Parts Verified By:							
Quality Assurance:					Date:		
Authorized Inspector:					Date:		

EXHIBIT 3 Page 3 of 3 – ASSEMBLY TEST REPORT

Date: 1/4/2019 2:40:25 PM Page 1 of 15

FISHER CONTROLS International, LLC	REP ORDER NUMBER 025 -X215396	ITEM NO. 1	Valve Serial No F001810401	TAG NO.	APR / ATR CSP-8446220-4-1
			Customer Order Number	SNG10178810	ISSUED BY BILL MOHR DATE 1/4/19

CODE:	ASME B & PVC, Sect. III, Div. 1	YEAR/ADDENDA:	1998 Edition, 1998 Addenda	N-Stamp	YES	Class	2

Sequence No.	X - If required: Cust	Owner	ANI	Fish Insp	Description	Assembler	PROCD /REF APR	REV	AMEND /REF APR	REV	TEST PRESSURE	TIME (MIN)	ALLOW LEAKAGE	FINAL RESULT
1			X		VERIFY PARTS PRIOR TO ASSEMBLY	X								

Equipment:

NCR No. Date:

Comments:

Fisher				ANI				Customer				Owner			
Printed Name	Printed name			Printed Name				Printer Name				Printed Name			
Signature	Date	Signature	Date	Signature		Date		Signature		Date		Signature		Date	

EXHIBIT 5 – CORRECTIVE ACTION REQUEST

FISHER CONTROLS **CORRECTIVE ACTION REQUEST**

Marshalltown, IA 50158 Ref: FMP 2K9

Evaluation for10 CFR21? CAR Number:
Discovery Date:
NPT Investigation #:
FIN:
Quality Program: Cause

To be completed by Originator: Issued To:
(Sections, if not applicable, should be documented as N/A or left blank.)

Originated By: QA MAnual affected: Manual section: Additional Manual section(s): Other Procedures:

Other CARs referenced: Part Number: FS Number: Quantity : NCR NO: Vendor # Date Issued:

*Finding:

Significant Conditions AdverseTo Quality: QA Log By: Reply Expected

To be completed by owning (including Supplier) Manager/Foreman/Supervisor:

Problem solving Team Member(s):

*Cause of finding:

*Action taken to correct finding:

Completed Date:

*Action plan to prevent re-occurance of finding or eliminate cause of finding : Owner Target date

This finding will be ready for re audit on: Owning Manager/Supervisor: Date:

To be completed by Quality Assurance Manager/Representative :

The corrective actions, target dates, and assignments are sufficient for this problem:

QA Representative: Agreed solution date:

Reaudit or verification indicates that the corrective action has been effectively implemented:

Comments

Quality Assurance Manager/Representative: Verfication Date: Replaced CAR#:

EXHIBIT 10 – NONCONFORMING MATERIAL REPORT

FISHER

EMERSON. Process Management

Nonconforming Material Report

Date printed: 15-Jan-19

Inventory Org: VLVS_USA_IO_Marshalltown_IA

Nonconformance Number: NC000250869

Nonconformance Source	SUPPLIER	Line Type		Supplier	BRAFE ENGINEERING LIMITED
Nonconformance ItemType	COMPONENT	Sales Order Number		PO Number	4780046834
Nonconformance Status	NEW	SO Line Number		PO Line Number	1
Quantity Nonconforming	1	Customer PO		PO Release Number	
Defect Code	13.02	Customer		Supplier Lot Number	
Cause Description	Failed to meet print requirements	Project Number		PO Receipt Number	5264745
Entered by User	JENSEN, ROBERT E	Task Number		**Component Item**	
Employee Name		**Job**		Component Item Decription	
Date Opened	11-JAN-19	From Op Seq Number		Component Item Material Description	
Customer Reference Item		From Intraoperation Step		Component Pattern Number	
Item	5R6665X001D	Department		Component Revision	
Item Decription	VALVE BODY CSTG ~ 12 IN 300 LB, 3D SAND PRINTING	To Op Seq Number		Component UOM	
Item Material Description	ASME SA351 CF8M FMS20B58	To Intraoperation Step		Component Lot Number	
Pattern Number	50B-1	To Department		Component Serial Number	
Revision		Code	ASME BPVC	Component Subinventory	
Quantity	1	Section	III, Div. 1	Component Locator	
UOM	Each	Design Code	1998, 1998	Subinventory	
Serial Number	AB000338	Other Code	1998, 1998	Locator	
Lot Number		Nuclear Class	3	License Plate Number	
Heat Number	TP41-RTV822	Stamp	Yes	Order Detailer	
Value Stream				Change Order Detailer	

Detailed Description	Per 5R6665 rev C. The 2.50 x 0.625 x 0.063 raised pad that is supposed to be below the foundry markings is missing.

EXHIBIT 11 – IDENTIFICATION TAG

EXHIBIT 12 Page 1 of 2 – RECONCILIATION OF NONCONFORMANCES (CLASS 1)

EMERSON.

Supplemental Non-Conformance Reconciliation for Design Report 18QN05-DR-01

Document No:	18QN05-DR-01.01	
Revision	A	
Prepared By:	CAC	5 Sept 2018
Checked By:	WDS	5 Sept 2018
Page:	2 of 15	
Revised By:		

SUPPLEMENTAL NON-CONFORMANCE RECONCILIATION CERTIFICATION

Customer: Southern Nuclear
Plant: Joseph M. Farley Nuclear Plant

Customer Purchase Order: SNA10155356
Customer Design Specification: G678844, Rev. 0

Code Year and Addenda
Design: ASME B&PV Code Section III, Division 1, 1971 Edition, S1971 Addenda, Class 1
Other: ASME B&PV Code Section III, Division 1, 2001 Edition, 2003 Addenda, Class 1

Fisher Order: 026N-F037414
Fisher Item Number: 0001 (Hardware)
001D (Software)
Fisher Quote Number: 17SQ114
Nuclear Project Number: CSP-78P169/3245490
Qualification Reference Number: 18QN05

Construction: NPS 4 Class 1500 Type SS-84 BWE Valve Body

Order Item	Serial Number	Tag Number	BOM Drawing Number
0001	F001437879	4SA88RGA	GE91007

This is to certify, to the best of my knowledge and belief, that this Reconciliation Report is complete and accurate. In accordance with Paragraph NA-3355 for the ASME Boiler and Pressure Vessel Code listed above, the referenced Non-Conforming Reports have been reviewed and do not affect the design report referenced above.

Prepared By:
Digitally signed by Curtis Conrad
Curtis Conrad
Qualification Engineer

Reviewed By:
Digitally signed by Wyatt Seals
Date: 2018.09.05 16:28:36 -05'00'
Wyatt Seals
Engineering Reviewer

Date: 5 September 2018

EXHIBIT 12 Page 2 of 2 – RECONCILIATION OF NONCONFORMANCES (CLASS 1)

EMERSON

Supplemental Non-Conformance Reconciliation for Design Report 18QN05-DR-01

Document No:	18QN05-DR-01.01	
Revision	A	
Prepared By:	CAC	5 Sept 2018
Checked By:	WDS	5 Sept 2018
Page:	3 of 15	
Revised By:		

I, the undersigned, being a Registered Professional Engineer competent in the applicable field of design and using the certified Design Specification and the drawings identified in this report as a basis for design, do hereby certify that to the best of my knowledge and belief this Design Report is complete and accurate and complies with the design requirements of the ASME Boiler and Pressure Vessel Code, Section III, Division 1, 1971 Edition with Summer 1971 Addenda.

Zachary Mailahn

License Number: P24545
State: Iowa
Expiration Date: 12/31/2019

LICENSED PROFESSIONAL ENGINEER
ZACHARY LEE MAILAHN
P24545
IOWA

Date: 6 September 2018

EXHIBIT 13 – *INDOTRINATION* MATRIX

Location / Function	NQAM Sections			Description General Information / Training Form
Mtn-GR				
Assembler / Tester				
	1	2	3	Quality Training:
	5	6	9	NQAM Current Issue & Rev
	11	12	13	10CFR Part 21
	14	15	16	Training Form: Group Training Log (PeopleSoft)
	17	20		
Electrician				
	1	2	3	Quality Training:
	6	13	16	NQAM Current Issue & Rev
	17	20		10CFR Part 21
				Training Form: Group Training Log (PeopleSoft)
Furnace Operator				
	1	2	3	Quality Training:
	5	6	9	NQAM Current Issue & Rev
	10	11	13	10CFR Part 21
	14	15	16	Training Form: Group Training Log (PeopleSoft)
	17	20		Ref: Training Matrix, Section 7.0
Instrumentation				
	1	2	3	Quality Training:
	6	10	13	NQAM Current Issue & Rev
	16	17	20	10CFR Part 21
				Training Form: Group Training Log (PeopleSoft)
Machine Operator				
	1	2	3	Quality Training:
	5	6	9	NQAM Current Issue & Rev
	11	12	13	10CFR Part 21
	14	15	16	Training Form: Group Training Log (PeopleSoft)
	17	20		
Manufacturing & Quality Salaried Personnel				
	All Sections			NQAM Training Record Form (Quality Manager)

EXHIBIT 15 – INSPECTION AND TEST REPORT

FISHER CONTROLS INTERNATIONAL / INSPECTION AND TEST REPORT (FORM 3126 Q)					
Piece Serial No	Quantity	MPR / ITR No	CSP-8446220-3-4	Rev.	C
Finished Part No	Rev	Issued By:	Pam Wynn	Date	08/10/18
Rough Part No.	Rev	Revised By	Pam Wynn	Date	11/08/18
Part Description					
Material Type					
NCR / DVR No.'s					
Code ASME B PVC, Sect. III, Div. 1	Year/Addenda	1998 Edition, 1998 Addenda	Class 2	N-Stamp	YES

HOLD/WITNESS POINTS CUST	HOLD/WITNESS POINTS ANI	Chk If Req	ROUGH STOCK INSPECTION	OPERATION PERFORMED BY AND DATE
		X	☐ MSS-SP-55 ☐ NUCLEAR STANDARD — HEAT/LOT #	
			VENDOR:	
			☐ MPT ☐ LPT ☐ UT ☐ RT # — Patt. No.	
			PO # — Code:	
			PR # — S/N	
		X	STAMP PIECE SERIAL NO. ON PART	
			WELDING/HT/HF — PROCEDURE or REF MPR / Rev / AMEND or REF MPR / Rev	
X		X	Fab weld nipple	
			INSPECTION / NDE	
		X	MT/PT the nipple fab weld	
		X	**FINAL INSPECTION**	
		X	**QAD VERIFICATION / VENDOR**	

COMMENTS:

REVIEWED/APPROVED: (QP&S)	Mark Weese	DATE 11/08/18
APPROVED: (QA for Appendix B Equip.)	Melody Gray	DATE 11/09/18
REVIEWED: (ANI / AI for ASME Sec. III Equip.)		DATE

GAGES USED: (use back for additional pages)

See MPR for procedures and revisions (record procedures and revisions used)

EXHIBIT 18 PAGE 1 OF 3 – MANUFACTURING PROCESSING REQUIREMENTS

Manufacturing Processing Requirement

Specification 0308911-mpr-6 Rev A Page 1 of 3

Exelon Clinton Power Class 3	Originator	Rick Olsen	Date	1/Feb/2012
	Revised By		Date	
	Approved By	Pam Wynn	Date	2/Feb/2012
	QA Approval	Colleen Baie	Date	6/Feb/2012
	ANI Review	Kent Cocking	Date	6/Feb/2012

I. GENERAL REQUIREMENTS

A. The applicable code for design is ASME Boiler and Pressure Vessel Code, Sect. III, Div. 1, 1974 Edition, Winter 1976 Addenda, Code Case 1774-1.

B. The applicable code for all else is ASME Boiler and Pressure Vessel Code, Sect. III, Div. 1, 1998 Edition, 1998 Addenda.

C. N-stamp required

D. Minimum wall thickness check. Report required. If not listed on the drawing the minimum wall dimensions shall be listed on the ITR.

E. When indicated on the ITR a component hydro test is required prior to nickel plating. Record actual results on the ITR.

F. Weld stop into body and perform MPT on fabrication weld prior to nickel plating.

II. COMMERCIAL GRADE DEDICATION

A. Commercial grade parts shall be inspected and the Nuclear Safety Related Inspection Report completed prior to assembly per FMP 2K27 (current revision). Record revision used on the ITR.

III. WELDING AND WELD REPAIR REQUIREMENTS

A. Weld Order Reports that include actual analysis of filler material and delta ferrite certification for SST.

B. Weld maps are required for major repairs to castings and forgings.

1. Major repairs are defined as any cavity prepared for weld that exceeds 10% of the wall thickness or 3/8" whichever is smaller or exceeds 10 square inches in area or to correct a leak found during hydro testing.

C. Major weld repairs to forgings require radiographic examination.

EXHIBIT 18 PAGE 2 OF 3 – MANUFACTURING PROCESSING REQUIREMENTS

Manufacturing Processing Requirement

Specification 0308911-mpr-6 Rev A Page 2 of 3

D. All repairs to forgings require MPT or LPT examination
   1. Material specifications SA-105, SA-182, and SA-350 also require MPT/LPT examination of the defect excavation
E. PWHT chart (if performed)

IV. NON-DESTRUCTIVE EXAMINATION
A. When indicated on the ITR, MPT stop to body weld prior to nickel plating.
B. Major weld repairs to forgings require radiographic examination.
C. All repairs to forgings require MPT or LPT examination

V. DOCUMENTATION
A. The following documentation is required.
   1. Weld Order Reports that include actual analysis of filler material and delta ferrite certification for SST
   2. Maps of major repairs
   3. Minimum wall thickness report
   4. NDE Test Reports including RT film (if any)
   5. PWHT chart (if performed)
   6. NCR's
   7. ITR with hydro results (if performed)

EXHIBIT 18 PAGE 3 OF 3 – MANUFACTURING PROCESSING REQUIREMENTS

Manufacturing Processing Requirement

Specification 0308911-mpr-6 Rev A Page 3 of 3

VI. PROCEDURE INDEX

Category	Procedure		Amendment
Weld			
P1 to P1	FMP 5CP1.1TSNN	Rev. 3	None
P1 to P1	FMP 5CP1.1TSPN	Rev. 4	None
P8 to P8	FMP 5CP8.8G1.1TSNN	Rev. 2	None
PWHT	FMP 6A1	Rev. 14	None
NDE			
RT	FMP 2G12	Rev. 17	None
	FMP 2G14	Rev. 20	None
MPT	FMP 2G31, Appendix A	Rev. 5	None
LPT	FMP 2G30, Appendix A	Rev. 6	None
Minimum wall thickness	FMP 2B2.4	Rev. 15	None
Inspection	FMP 2K27 (CURRENT REVISION)		MPR II.A
Hydro	FMP 2C2.14	Rev. 1	MPR I.E.

EXHIBIT 19 – NONCONFORMING MATERIAL DISPOSITION REPORT

FISHER

EMERSON. Process Management

Nonconforming Material Disposition Report

Inventory Organization VLVS_USA_IO_Marshalltown_IA Date printed 23-JAN-19

Disposition Number	DISP000148256	Nonconformance Number	NC000250870

Disposition	**REPAIR**	Project Number		Sales Order Number	
Source Owner		Task Number		SO Line Number	
Defect Code	13.02	**Job**		Supplier	BRAFE ENGINEERING LIMITED
Cause Description	Failed to meet print requirements	Customer Reference Item		PO Number	4780046834
Disposition Status	CLOSED	**Item**	5R6665X001D	PO Line Number	1
Disposition Quantity	1	Item Description	VALVE BODY CSTG ~ 12 IN 300 LB, 3D SAND PRINTING	PO Release Number	
Disposition UOM		Item Material Description	ASME SA351 CF8M FMS20B58	Supplier Lot Number	
Disposition Owner		Pattern Number	50B-1	PO Receipt Number	5264745
Implementation By		Revision		**Component Item**	
Entered by User	BERTHUSEN, WILLIAM S	Serial Number	AB000338	Comp. Item Description	
Date Opened	16-JAN-19	Lot Number		Comp.Item Material Desc	
Date Closed	16-JAN-19	Heat Number	TP41-RTV822	Comp.Pattern Number	
Rework Job		Code	ASME BPVC	Component Revision	
Value Stream		Section	III, Div. 1	Component Lot No.	
Line Type		Design Code	1998, 1998	Component Serial No.	
Name of Original Detailer		Other Code	1998, 1998	Subinventory	
Name of Change Order Detailer		Nuclear Class	3	Locator	
		Stamp	yes	License Plate Number	

Customer PO Disposition Description	**BOS**			
	Rework Operation Description	Rwk Op Seq No.	Rework Dept.	Resource Code
Detailed Description	**SIMPLE REWORK – Stamped the logo, size, class and the P designation per the print. BB 1-16-19. Per 5R6665 rev C. The Fisher logo, size, class and the P for the casting type are missing.**			
Notes				

Approver Name	BILL_BERTHUSEN			
Date of Approval	16-JAN-19			
Approver Title	Quality Assurance	Product Engineer	Nuclear Qualification Engineer	Authorized Nuclear Inspector

EXHIBIT 22 PAGE 1 of 2 – PROCUREMENT PROCESSING REQUIREMENTS

FISHER

Procurement Processing Requirements

EMERSON Process Management

Specification CSP-8329245-PPR-21 Rev B Page 1 of 2

Nuclear Casting Class 3	Originator	Mark Weese	Date	06/04/2018
	Revised By	Mark Weese	Date	08/06/2018
	Approved By	Pam Wynn	Date	08/06/2018
	QA Approval	Melody Gray	Date	08/06/2018

I. GENERAL REQUIREMENTS

A. The applicable code for all else is ASME Boiler & Pressure Vessel Code, Section III, Div. 1, 1998 Edition, 1998 Addenda.

B. Potentially harmful materials such as lead, mercury, halides or other low melting point metals, their compounds or materials containing low melting point metals shall not be used in direct contact with stainless steel surfaces. Grinding material shall be new or previously used on SST or nickel base materials only. Brushes shall be made of 300 series SST and not previously used on materials other than SST.

C. **Use only the procedures, amendments, and revisions, listed in the procedure Index**

II. NON-DESTRUCTIVE EXAMINATION

A. Visual examination of castings to MSS-SP-55

III. WELD REPAIR REQUIREMENTS

A. Weld Order Reports that include actual analysis of filler material including delta ferrite content for SST.

B. Weld maps are required for major repairs.

C. PWHT chart (if performed)

IV. DOCUMENTATION

A. The following documentation is required:

1. Certified chemical and physical test results. Report shall include year and addenda of the Code Supplier QSC# and expiration date shall be identified on the CMTR or certification of approved Q.A. program
2. Weld Order Reports that include actual analysis of filler material including delta ferrite content for SST.
3. Weld maps are required for major repairs

Procurement Processing Requirements

Specification CSP-8329245-PPR-21 Rev B Page 2 of 2

4. Certification of heat treatment - a chart or a complete description.
5. NDE test report including RT film (if any)
6. Certification that all, applicable requirements of the purchase order, Code Edition and Addenda, and this specification have been complied with. This certification shall be signed and dated.
7. Non-destructive test personnel and welder qualifications. (as applicable)

V. Forward RT film (if any) to the following address:

Fisher Controls International LLC
205 South Center St.
Marshalltown, Iowa 50158-190
Attn: Q.A. Documentation Dept.

VI. PROCEDURE INDEX

Category	Procedure	Revision	Amendment/Ref
WELDING	FMP 5CP8.8G1.1TSNN	3	None
	FMP 5CP1.1TNN	3	None
	FMP 5CP1.1TPN	4	None
	PR-008	11	None
	PR-064	10	None
	PR-064A	3	None
HEAT TREAT	FMP 6A1	17	None
MT	FMP 2G31, APPENDIX A	8	None
MT	FMP 2G31.1, APPENDIX A	10	None
PT	FMP 2G30, APPENDIX A	7	None
PT	FMP 2G30.1, APPENDIX A	6	None
PT	FMP 2G30.2, APPENDIX A	5	None
PT	FMP 2G30.3, APPENDIX A	6	None
RT	FMP 2G14	20	None

EXHIBIT 24 –PURCHASE ORDER

EMERSON Process Management

Standard Purchase Order

PO Nbr: 4123826313 **PO Rev.:** 0

PO Issue Date: 28-Jul-17
PO Rev. Date:
Sys-Gen. Approved PO Date: 28-Jul-17

Supplier:
METALTEK INTL WISCONSIN CENTRIFUGAL DIVISION
905 E ST PAUL AVE
WAUKESHA, WI 53188-3898
United States

Supplier Contact: DALE STIEGLBAUER **Phone:** (262) 544-7711
E-Mail: DALE.STIEGLBAUER@METALTEK.COM **Fax:**

Issued By: Fisher Controls International LLC
Tax ID/RFC/VAT: 43-1156463

Buyer: JEFFRIES, NANETTE **Phone:**
E-Mail: Nanette.Jeffries@Emerson.com **Fax:**

Ship To: **Attn: Receiving**
FISHER CONTROLS INTERNATIONAL LLC
GOVERNOR ROAD PLANT 1309 E OLIVE ST
MARSHALLTOWN, IA 50158

Bill To: **Attn: Accounts Payables**
Fisher Controls International LLC
vlvsmtowninvoices@dataserv-stl.com
P.O. Box 29199
St. Louis, MO 63126-9199

Payment	Curr	Delivery	Title Transfer	Freight	Carrier	Final Destination
5TH 3RD PROX	USD	EMR2006		Collect	FEDEX	

This Purchase Order number and Revision, Release Number and Revision, and appropriate line Item Number(s) must appear on all Invoices, Packing lists, cartons and correspondence related to this order. See the "Additional Instructions" section below for further information!

Line	Ship #	Item No. / Rev Description	Tax	Req. Ship Date	Req. Rec. Date	Qty	UoM	Unit Price	Ext. Price
1	1	**GE44016X57A Rev # D** VALVE BODY,HPNS,CSTG~1-2,CL2075,BWE	N	08-DEC-17	13-DEC-17	3.00	EACH		

Pattern: LPP-J
Material: ASME SA351 CF3M FMS20B58
FMS20B58 Rev # N: CONTROLLED COMPOSITION AUSTENITIC STAINLESS STEEL CASTINGS
Process Code: NU.--.--.01
NU - USA NUCLEAR 10CFR PART50 APP B NUCLEAR SAFETY RELATED ITEM 10CFR PART21 APPLIES:
01 - ASME III BPVC CODE ITEM
Additional Specifications:
1010640CAP14-PPR-21 Rev # A: See Specification 1010640CAP14-PPR-21
CSP-QC004 Rev # A: CSP - ASME CLASS 2 CERTIFICATION
CSP-QR046 Rev # 8: QUALITY PROGRAM RESTRICTION AND INSTRUCTIONS FOR SUPPLIER LISTED
ES53 Rev # X: MARKING REQUIREMENTS FOR VALVE BODIES, BONNETS AND LEVELTROLS
FGS7D4 Rev # H: MATL MARKING SYMBOLS FOR CSTGS AND FORGINGS
GE44016 Rev # D: ENGINEERING DRAWING

Total:

Additional Instructions:
PLEASE EXPEDITE TO DELIVER AS REQUESTED - NEEDING SHIPMENT IN DECEMBER

Adherence to FGS 15B13.0 Rev. A "Supplier Quality Manual" is required
Solid Wood Packing Materials shall comply with ISPM-15 for all international shipments
FGS7E4 Rev C Part marking requirements – mark country of origin per FGS 7E4
WMP11H7 Rev A Solid wood packing materials to comply w/IPPC regulations – USA import instructions

Supplier Acknowledgement And Acceptance

Please acknowledge receipt of this PO and confirm the required date of delivery, the order price and quantity to the buyer contact at top of document. Please review Additional Instructions below.

Accepted By: _____ **Authorized Signature:** _____ **Accepted Date:** _____

EXHIBIT 28 Page 1 of 3 – ASSEMBLY WORK ORDER

VLVS_USA_IO_Marshalltown_IA

Assembly:
OPS-049-8049481162-0001

Job# : 5145548

Job Qty: 10

Description : 546NS-44, ITP

Material :

Drawing Nbr	Drawing Rev	Process Code	Sch Group	Group Tech Code	Comp Date
			MTN-NUCLEAR		**23-SEP-13**

Process Code Description:

Planner	:	Accounting Class Code	: S Assembly
Spec . Req	: Job Mass Loaded on 16-SEP-2013 06:02:15 (server timezone)	Print Date	: 30-Oct-13 19:22:37 PM
Sub Inv	: FG	Start Date	: 29-JUL-13
Location	: FG....1218164.	Heat #	:
Proj Nbr	: 1218164	Vendor	:
Proj Name	: Lakeside**	Kanban Card #	:
Proj Manager	: LUSTYK SCOTT		
Proj Admin	:		

Assembly Job Information

Customer Name	: LAKESIDE PROCESS CONTROLS LTD	**Ultimate Destination**	**: CA**
Customer PO #	: 182229		
Ship Set	: No	Rep Order Number	: 049 -8049481162
Arrival Set	: No	Rep Order Line number	: 1
Schedule Date	: 23-SEP-13	JDE Number	:
Promise Date	: 23-SEP-13	Order Type	: Order_TD_NonUS EndUse_USA_VLVS
Cust Req Date	: 01-AUG-13	Sales Order Number	: 1141259
OE Detailer	: No detailer defined	Sales Order Line #	: 1.1
Serial Number Range	: **0021251379 To 0021251388**	Shipment Priority	: STANDARD PRIORITY
		Paint	**: STANDARD**

Order Line
K80_SPECIAL ORDER ENTRY
EP GROUP NUCLEAR

Routing Summary

Op#	Dept	Resource	Op Description	Supplier
10	NUC ASSY	NUCSTOCK	PULL PARTS	
3900	PROCESS	PAINT	LG PAINT	
8800	NUC ASSY	NUCLEAR	Migrated assembly - NUC	

Wip Job / Schedule Attachments

Routing Comments:

Additional Specs

Spec Number	Spec Rev	Spec Name	Specification Details

Component Item Additional Specs

Item / Spec Number	Item Description	Spec Rev	Spec Name	Specification Details

EXHIBIT 28 Page 2 of 3 – ASSEMBLY WORK ORDER

VLVS_USA_IO_Marshalltown_IA

Assembly:
OPS-049-8049481162-0001

Job# : 5145548

Job Qty: 10

Description : 546NS-44, ITP

Material :

Drawing Nbr	Drawing Rev	Process Code	Sch Group	Group Tech Code	Comp Date
			MTN-NUCLEAR		23-SEP-13

Process Code Description:

CSP

Item / Spec Number	Item Description	Spec Rev	Spec Name	Specification Details

CERT

Item / Spec Number	Item Description	Spec Rev	Spec Name	Specification Details

Component item	Pattern	Weight	Weight UOM

Phantom Items

Phantom Item	Primary Drawing	Included Items

Customer Selected Options

Serial/Tag Number

Serial Number	Tag Number
0021251379	
0021251380	
0021251381	
0021251382	
0021251383	
0021251384	
0021251385	
0021251386	
0021251387	
0021251388	

Nameplate Information

Component	Sales Option	Index Code	Label	Value

Component Tag Information

Type	P55-Tag Data	PSTG Code	Part Number	Letter Size	Lines / Characters	Attachment Method	Tag Size	Tag Material	Lockwire Length

Paint Information

Type	Size	Paint Procedure Number	Dry Film Thickness	Colors	P57-Paint Special	Paint Spec	Coating / Paint	Number of coats	Temp Limits

STANDARD PAINT

Special Note :
Certificate :
Tropicalization :
Test :

EXHIBIT 28 Page 3 of 3 – ASSEMBLY WORK ORDER

VLVS_USA_IO_Marshalltown_IA

Assembly: **Job# : 5145548**

OPS-049-8049481162-0001

Job Qty: 10

Description : 546NS-44, ITP

Material :

Drawing Nbr	Drawing Rev	Process Code	Sch Group	Group Tech Code	Comp Date
			MTN-NUCLEAR		**23-SEP-13**

Process Code Description:

Routing

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
10	PULL PARTS	PNUC	NUC ASSY	NUCSTOCK		20

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext
1P426928982	SCREW,SELF TAP ~ 4-24X0.19 PAN HD SLOTTED TYPEB	18-8 SST-SUPPLIERS STANDARD	ABVM101106..... Op pull	1	10
37B7756X012	NAMEPLATE,546NS ~ ENG/FR/FM&CSA IS&EXP/MTOWN SH1	ASTM B209-A91100-H12-14	BSINCOMING..... Op pull	1	10
FS1NW08-714	FS546NS-44/*SR ~		..... Push	1	10

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
3900	LG PAINT	PTLG	PROCESS	PAINT		5

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
8800	Migrated assembly - NUC	MANU	NUC ASSY	NUCLEAR		100

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

EXHIBIT 29 – SHIPPING PICK LIST

FISHER

EMERSON. Process Management

SHIPPING PICK LIST

Entered By: Steve Smith

Report Date: 5/22/2013 15:54:46 PM

Customer Name: CONTROL ASSOCIATES INC
Customer PO: VCRP-066
Ship To Address: CONTROL ASSOCIATES INC
20 COMMERCE DR
ALLENDALE , NJ 07401-1600 US

Ultimate Destination: US-UNITED STATES

Ship Set: No
Freight Terms: Prepaid And Add To Invoice
Ship Method: BESTWAY-TRUCK-STD SERVICE
Shipping Terms: UCC: FOB Origin Prepaid
Collect Account#
Packaging Instructions: Domestic (WMP 11A1)
Shipment Priority: STANDARD PRIORITY

Sales Order Number: **1099918**

IR/Source Number : 55644
Rep Order Number : 001 -MTNVCRP466
Delivery Number :
Shipping Notes

Sales Office: 001, VLVS - CONTROL ASSOCIATES
Request Date: 22-MAY-13

Line Number	Ordered Item	VS	Description	Qty	Schedule Ship Date	Quantity Avail. To Ship	Location	COO
1.1	2R2703X0782	SMALL	VALVE BODY ~ 1 CL150 RF FLG	1	22-MAY-13	1	SMSTORES SMINCOMING.....	*GB*

Pick ID

Material Description **Lot No.**

3903AM - ASTM A494 CY40 FMS19C4, FGS10A6

Shipping Notes
I05_ITEM INVOICE DESCRIPTION
2R2703X0782;

EXHIBIT 32 Page 1 of 4 – WORK ORDER

VLVS_USA_IO_Marshalltown_IA

Assembly:
13B2573X032

Job# : 5158731

Job Qty: 1

Description : VALVE BODY,WAFER~A31A,NPS8,CL150,SPCL

Material :
3309AM.. -- ASME SA351 CF8M FMS20B58

Drawing Nbr	Drawing Rev	Process Code	Sch Group	Group Tech Code	Comp Date
13B2573	0A	NU.--.--.01	MTN-NUCLEAR		17-DEC-13

Process Code Description: GENERAL- NUCLEAR UNITED STATES/NORTH AMERICA SOURCED AND ACCEPT/Q.A.- SECT III ASME BPVC/10CFR PART 21 APPLIES - REPORTING OF DEFECTS AND NONCONFORMANCES IS MANDATORY

Planner	: MTN800	Accounting Class Code	: S Prod
Spec . Req	:	Print Date	: 25-Oct-13 16:40:51 PM
Sub Inv	: NUCSTORES	Start Date	: 25-OCT-13
Location	: NUINCOMING.....	Heat #	:
Proj Nbr	:	Vendor	:
Proj Name	:	Kanban Card #	:
Proj Manager	:		
Proj Admin	:		

Routing Summary

Op#	Dept	Resource	Op Description	Supplier
101	STOCKROOM	ROUGHSTK	GET FROM STOCK	
301	ROTARY	LATHE-0122	TN 5226 MACHINE 1ST END	
401	ROTARY	LATHE-0122	TN 5227 MACHINE 2ND END	
501	ROTARY	MILL-0776	MACH SHAFT BORES	
601	ROTARY	MILL-0855	TN 106788 MACHINE LINE BOLTING	
602	ROTARY	MILL-0895	TN 106789 MACHINE LINE BOLTING	
701	PROCESS	WASH	WASH	
1001	NUCLEAR	STOCKROOM	INSPECT-CHECK MIN WALL PER ITR	
9501	INSPECTION	M-QA-DOCS	REVIEW QA DOCUMENTS	

Wip Job / Schedule Attachments

Routing Comments:

Additional Specs

Spec Number	Spec Rev	Spec Name	Specification Details
13B2573	0A	PRIMARY DRAWING	ENGINEERING DRAWING
FGS8A1.2	0Z	GENERAL SPEC	FLANGE FINISH PER FGS 8A1-2 STANDARD FINISH ALL FF & RF ANSI/ASME,EN1092, & JIS
FGS4L1.8.25	AY	HYDRO SPEC	HYDRO 450 PSI/2 MIN
CSP-0429048-ITR-1-2	0B	ITR	See Specification CSP-0429048-ITR-1-2
CSP-0429048-MPR-1	0B	MPR	See Specification CSP-0429048-MPR-1

Component Item Additional Specs

Item / Spec Number	Item Description	Spec Rev	Spec Name	Specification Details
13B2575X04A				
CSP-0429048-PPR-1	VALVE BODY CSTG,WF~A31A,NPS8, CL150	0A	PPR	See Specification CSP-0429048-PPR-1
FGS7D4	VALVE BODY CSTG,WF~A31A,NPS8,	0H	GENERAL SPEC	MATL MARKING SYMBOLS FOR CSTGS

EXHIBIT 32 Page 2 of 4 – WORK ORDER

VLVS_USA_IO_Marshalltown_IA

Assembly:
13B2573X032

Job# : 5158731

Job Qty: 1

Description : VALVE BODY,WAFER~A31A,NPS8,CL150,SPCL

Material :
3309AM.. -- ASME SA351 CF8M FMS20B58

Drawing Nbr	Drawing Rev	Process Code	Sch Group	Group Tech Code	Comp Date
13B2573	0A	NU.--.--.01	MTN-NUCLEAR		17-DEC-13

Process Code Description: GENERAL- NUCLEAR UNITED STATES/NORTH AMERICA SOURCED AND ACCEPT/Q.A.- SECT III ASME BPVC/10CFR PART 21 APPLIES - REPORTING OF DEFECTS AND NONCONFORMANCES IS MANDATORY

CL150 AND FORGINGS

Component item	Pattern	Weight	Weight UOM
13B2575X04A	HXZ	51	LB

Phantom Items

Phantom Item	Primary Drawing	Included Items

Customer Selected Options

Serial/Tag Number

Serial Number	Tag Number

Nameplate Information

Component	Sales Option	Index Code	Label	Value

Component Tag Information

Type	P55-Tag Data	PSTG Code	Part Number	Letter Size	Lines / Characters	Attachment Method	Tag Size	Tag Material	Lockwire Length

Paint Information

Type	Size	Paint Procedure Number	Dry Film Thickness	Colors	P57-Paint Special	Paint Spec	Coating / Paint	Number of coats	Temp Limits

Special Note :
Certificate :
Tropicalization :
Test :

EXHIBIT 32 Page 3 of 4 – WORK ORDER

VLVS_USA_IO_Marshalltown_IA

Assembly:
13B2573X032

Job# : 5158731

Job Qty: 1

Description : VALVE BODY,WAFER~A31A,NPS8,CL150,SPCL

Material :
3309AM.. -- ASME SA351 CF8M FMS20B58

Drawing Nbr	Drawing Rev	Process Code	Sch Group	Group Tech Code	Comp Date
13B2573	0A	NU.--.--.01	MTN-NUCLEAR		17-DEC-13

Process Code Description: GENERAL- NUCLEAR UNITED STATES/NORTH AMERICA SOURCED AND ACCEPT/Q.A.- SECT III ASME BPVC/10CFR PART 21 APPLIES - REPORTING OF DEFECTS AND NONCONFORMANCES IS MANDATORY

Routing

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
101	GET FROM STOCK		STOCKROOM	ROUGHSTK	.17	.17

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext
13B2575X04A	VALVE BODY CSTG,WF~A31A,NPS8,CL150	ASME SA351 CF8M FMS20B58	..... Push	1	1

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
301	TN 5226 MACHINE 1ST END		ROTARY	LATHE-0122	3.13	1.05

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
401	TN 5227 MACHINE 2ND END		ROTARY	LATHE-0122	3.13	.61

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
501	MACH SHAFT BORES		ROTARY	MILL-0776	3.75	10

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

EXHIBIT 32 Page 4 of 4 – WORK ORDER

VLVS_USA_IO_Marshalltown_IA

Assembly:
13B2573X032

Job# : 5158731

Job Qty: 1

Description : VALVE BODY,WAFER-A31A,NPS8,CL150,SPCL

Material :
3309AM.. -- ASME SA351 CF8M FMS20B58

Drawing Nbr	Drawing Rev	Process Code	Sch Group	Group Tech Code	Comp Date
13B2573	0A	NU.--.--.01	MTN-NUCLEAR		17-DEC-13

Process Code Description: GENERAL- NUCLEAR UNITED STATES/NORTH AMERICA SOURCED AND ACCEPT/Q.A.- SECT III ASME BPVC/10CFR PART 21 APPLIES - REPORTING OF DEFECTS AND NONCONFORMANCES IS MANDATORY

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
601	TN 106788 MACHINE LINE BOLTING		ROTARY	MILL-0855	1.88	.26

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
602	TN 106789 MACHINE LINE BOLTING		ROTARY	MILL-0895	.75	.14111

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
701	WASH		PROCESS	WASH	.33	.33

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
1001	INSPECT-CHECK MIN WALL PER ITR		NUCLEAR	STOCKROOM	.17	0

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

Operation Seq	Operation Description	Op Code	Dept.	Resource	SUT	CRT
9501	REVIEW QA DOCUMENTS		INSPECTION	M-QA-DOCS	.17	.1

Qty Good	Qty Reject	Qty Scrapped	Emp #	Emp Sig	NCR #	Inspector	Date

Component Item	Component Desc	Component Material	Supply	Qty Per	Qty Ext

EXHIBIT 34 Page 1 of 2 – SPECIFICATION AND DESIGN REVIEW

EMERSON

Specification and Design Review

Compliance With 10CFR21 Required

Fisher Order No.:	Item No.:	Revision:

SDR Review date: _____
CSP No.: _____
Fisher Quote No.: _____ QER No: _____
Valve Serial No.: _____

Customer Design Spec. w/ Rev: _____
Customer Order No.: _____
Tag No.(s): N/A

Code/Addenda/Class: Design: –
Other: –
Safety Function: –
Design PT: _____PSIG _____°F

Edition: – ____ Addenda, Class: – Code Case: N/A
Edition: – ____ Addenda, Class: – Code Case: N/A
Plant Site: _____

Body Size/Type: _____

Line Size: _____

Body Ends: _____

Body Mat'l: _____

P/T Rating: -- Class: _____

Cold Working Pressure: _____PSIG @ 100°F

Code Bolting: _____

Code Nuts: _____

Disc/Plug Material: _____

Nipple/Reducer: _____

Hydro Body: _____

Valve Closure: _____

Max Dp: _____PSID

Seat Leakage: _____

Packing Leak: _____

Impact Test/Temp: _____

Bonnet Style: _____

Bonnet Mat'l: _____

Leak Off: _____

Actuator Type/Size:

Sect. III (Level A) / Controlled Parts:	* Pressure Retaining

N or NPT Stamp Required: –
P. E.: _____
P. E. # _____ State: _____

Supplementary Reports: Indicate Yes or No

Design Report Required:	--
PE Stamped Design Report Required:	--
Seismic Report Required:	--
Environmental Qual. Report Required:	--
FMP 2Q23 Reconciliation Required:	--

Reviewed/Approved By:

Nuclear Qualification Engineer

Quality Plans & Specifications

Quality Assurance

Special Details:

_____
_____
_____
_____
_____
_____
_____

See Page 2 for Revision/Change Order Review
Form to be completed per FMP 2Q25

EXHIBIT 34 Page 2 of 2 – SPECIFICATION AND DESIGN REVIEW

EMERSON

Specification and Design Review
Compliance With 10CFR21 Required

Fisher Order No.:	Item No.:	Revision:

Change Request Order Revision Approvals

Description:			
	Revision	Nuclear Qualification Engineer	Quality Assurance

Description:			
	Revision	Nuclear Qualification Engineer	Quality Assurance

EXHIBIT 35 – Partial Release Authorization

EMERSON

Partial Release Authorization for Critical Path Components - 3118

Purpose: This form is used to preorder material when delivery requirements necessitate release for procurement.

Order/Item No.(s): _____

CSP No.: _____

SDR Meeting Complete for Partial Release Status? –
Notes:

Actuator Sizes Verified? –
Notes:

Are submittals/approvals required? –
Submittals:

Procedures to Submit for Approval:

Applicable Code Year/Addenda:
Materials/Design/Other:

Body Size(s):

QER or Seismic Analysis Complete? – Indicate QER # if applicable:

Engineering Test Required Prior to Partial Release? –

Test Description(s):

Components Approved for Release:

Reviewed Approved By:

Nuclear Qualifications Engineer Date

Quality Plans & Specifications Date

Quality Assurance Date

FMP2Q25 - Form 3118, Rev D, 1/20/17

EXHIBIT 39 – WELD ORDER

EMERSON

Weld Order Card

FISHER

Part Information

Assembly No.	Job Order No.	Piece S/N	Nonconformance No.	Part Description
2U9684X0052	18061733	AA047703		VALVE BODY ASSY

Operation	CSP/MPR No.	Rev	Foreman Signature	Date
5601	CSP-3236274-MPR-2	A		10/23/2018

Weld Material Data

Joint Description		Heat No.	Piece S/N	Procedure	Rev	Am	Rev
WELD REDUCER TO BODY - R END	①	33274L 01	AA047703	5CP5A.5ATMPN	2		
	②	BA9443	NA				

Weld Method: ◉ GTAW ○ SMAW ○ GMAW ○ FCAW ○ SAW ○ PAW

Control No.		Size	Type	Manufacturer	Heat/Lot
3565	☐	3/32	ER90S-B3	Midalloy	13/3260
3529	☐	1/8	ER90S-B3	Midalloy	13/3080
	☐	#N/A	#N/A	#N/A	#N/A

Inspector Date Welder Date

Joint Description		Heat No.	Piece S/N	Procedure	Rev	Am	Rev
WELD REDUCER TO BODY - R END	①	33274L 01	AA047703	5CP5A.5ATMPN	2		
	②	BA9443	NA				

Weld Method: ○ GTAW ○ SMAW ◉ GMAW ○ FCAW ○ SAW ○ PAW

Control No.		Size	Type	Manufacturer	Heat/Lot
3485	☐	.035	ER90S-B3	Midalloy	9/2917-123769
3087	☐	.045	ER90S-B3	Metrode	WO33770
	☐	#N/A	#N/A	#N/A	#N/A

Inspector Date Welder Date

Joint Description		Heat No.	Piece S/N	Procedure	Rev	Am	Rev
	①						
	②						

Weld Method: ○ GTAW ○ SMAW ○ GMAW ○ FCAW ○ SAW ○ PAW

Control No.		Size	Type	Manufacturer	Heat/Lot
	☐	#N/A	#N/A	#N/A	#N/A
	☐	#N/A	#N/A	#N/A	#N/A
	☐	#N/A	#N/A	#N/A	#N/A

Inspector Date Welder Date

Joint Description		Heat No.	Piece S/N	Procedure	Rev	Am	Rev
	①						
	②						

Weld Method: ○ GTAW ○ SMAW ○ GMAW ○ FCAW ○ SAW ○ PAW

Control No.		Size	Type	Manufacturer	Heat/Lot
	☐	#N/A	#N/A	#N/A	#N/A
	☐	#N/A	#N/A	#N/A	#N/A
	☐	#N/A	#N/A	#N/A	#N/A

Inspector Date Welder Date

Joint Description		Heat No.	Piece S/N	Procedure	Rev	Am	Rev
	①						
	②						

Weld Method: ○ GTAW ○ SMAW ○ GMAW ○ FCAW ○ SAW ○ PAW

Control No.		Size	Type	Manufacturer	Heat/Lot
	☐	#N/A	#N/A	#N/A	#N/A
	☐	#N/A	#N/A	#N/A	#N/A
	☐	#N/A	#N/A	#N/A	#N/A

Inspector Date Welder Date

EXHIBIT 40 – WELDING LOG

Fisher Controls International LLC
1702 South 12th Ave., Marshalltown, Iowa, 50158
ASME IX - Welder Maintenance Log (WML)
Confidential / Do NOT Reproduce

Welder's name	McKibbon, Matt		Status	Active
ID Number	7993			
Date of birth				
Stamp number	S80			
Company name	Fisher Controls International LLC			
Division	Marshalltown			

Welding process	Process type	WPQ/WPS number	WQT/Job reference number	Approved/Entered by	Date	Expiration date
FCAW	Semi-automatic	5CP6.5G1.1TMNN FMP 5C80.88 MGMP5GM	741316 735078 Test	Dale Jones CWI Dale Jones (epq-00880)	12/13/2009 8/7/2009 8/3/2009	6/13/2010
GMAW	Semi-automatic	5CP6.5G1.1TMNN FMP 5C80.88 MGMP5GM	741316 735078 Test	Dale Jones CWI Dale Jones (epq-00880)	12/13/2009 8/7/2009 8/3/2009	6/13/2010
GTAW	Manual	MGM17-4GT 5CP1.1TNN 5CP1.1 5C79.1 MGMP5&4GTDM	Test 735728 Bi6239 729771 Test	(epq-00894) Dale Jones Co-op Co-op (epq-00864)	11/19/2009 8/3/2009 4/20/2009 3/13/2009 2/19/2009	5/19/2010
SMAW	Manual	5CP1.1G1.1T2NN 5CP6.5G1.1T2NN MGMP52M 5C79.1 5CP5A.5A MGMP5&4GTDM	AC8394-02 AC2760 Test Bi8946 BH6930 Test	Dale Jones CWI Dale Jones (epq-00873) Co-op Co-op (epq-00864)	12/16/2009 8/19/2009 6/3/2009 4/23/2009 3/6/2009 2/19/2009	6/16/2010

EXHIBIT 41 – ASSEMBLY PROCESSING REQUIREMENTS

FISHER

Assembly Processing Requirement

EMERSON Process Management

Specification CSP-78P181-APR-34 Rev B Page 1 of 1

APS - Palo Verde	Originator	Kiley Misek	Date	26/Sep/2012
	Revised By	Pam Wynn	Date	12/10/18
	Approved By	Mark Weese	Date	12/11/18
Parts	QA Approval	Melody Gray	Date	12/12/18
	ANI Review	N/A	Date	N/A

I. GENERAL REQUIREMENTS

A. Potentially harmful materials such as lead, mercury, halides or other low melting point metals, their compounds or materials containing low melting point metals shall not be used in direct contact with stainless steel surfaces. Grinding wheels and brushes shall be made of 300 series SST and not previously used on materials other than SST.

B. Cleaning per FMP 7X5, Rev. 15

C. Package per FMP 11A7, Rev. 2

1. Include one (1) copy of the documentation package with shipment.

D. **HOLD for NCR approval.** "Accept-As-Is" NCR's that violate procurement documents or customer approved documents shall be submitted to the customer for approval.

II. DOCUMENTATION

A. The following documentation is required.

1. CMTR for process coded parts.
2. NDE reports.
3. Safety related C of C that includes material certification for the pin and stem.
   a) Additional statements or requirements listed in requisition (if any).
4. Nuclear Safety Related Inspection Report
5. NCR (if any).

B. Include one (1) copy of the documentation package with shipment.

C. Forward one (1) copy of the documentation package to the address listed on the requisition.

EXHIBIT 52 – NON-DESTRUCTIVE EXAMINATION REPORT (Liquid Penetrant Test)

EMERSON.

Liquid Penetrant Test

Report #: PT00001328

Manufacturer
Fisher Controls International LLC
Emerson Automation Solutions
1700 South 12th Ave
Marshalltown, IA 50158
USA

Piece Serial Number:	AA033336	**Part Number:**	GE39232X062
Unit Serial Number:		**Product Form (RCC-M only):**	
Part Description:	VEE-BALL ~ SIZE 3,SS-84PSV4	**Material Description:**	ASME SA182 F316L (S31603)/COCR-A FMS32A3
Heat Number:	CD25191B 51454 50528	**Job Number:**	16032726
Drawing Number:	GE39232	**Operation Number:**	6601
NCR Number:		**Quantity:**	1
Areas Inspected:	Finish machined seating surface of ball	**Surface Conditions:**	AS MACHINED
Nuclear Class:	1	**Thickness:**	varies
Procedure/Amendment (include revision):	FMP 2G30 REV 5 / AM-1 REV A		
Acceptance Criteria/Customer Spec/CSP (include revision):	ASME Section III / 0876780VOG-MPR-1 REV A		

Liquid Penetrant Detail

Lighting Equipment:	MAGNAFLUX EV6000	**Lighting Scale:**	BLACK 1000 µW/CM² MIN		
Penetrant Dwell Time:	10 TO 30 MIN	**Evaluation Time:**	10 TO 30 MIN	**Part Temperature:**	60deg F (16C) - 125deg F (52C)
Cleaner Batch Number:	NA	**Cleaner Type:**	Water/H2O		
Penetrant Batch Number:	16H012	**Penetrant Type:**	ZL-15B		
Developer Batch Number:	13M033	**Developer Type:**	ZP-4B	S Dry (Form A)	£ NonAqueous (Form D)

Inspection Method: WATER WASH – FLOURESCENT SE165 TYPE I METHOD A

Inspection Results

Inspection Results:	Accepted		
Comment:			
Inspection Date:	12-Apr-2018 14:38	**Qualification:**	SNT-TC-1A LEVEL II
		Revised By:	
Inspector Name:	Jensen, Robert [EPM/MTN]	**Revision Date:**	

Robert Jensen

EXHIBIT 52 – NON-DESTRUCTIVE EXAMINATION REPORT (Magnetic Particle Test)

EMERSON

Magnetic Particle Test

Report #: MT00003374

Manufacturer
Fisher Controls International LLC
Emerson Automation Solutions
1700 South 12th Ave
Marshalltown, IA 50158
USA

Piece Serial Number:	AB000184	**Part Number:**	G26553X0052
Unit Serial Number:	NA	**Product Form (RCC-M only):**	
Part Description:	RING,RETAINING~10 9200 CL150 CL2	**Material Description:**	ASME SA516 GRADE 70
Heat Number:	53851-02-8502076	**Job Number:**	18727166
Drawing Number:	G26553	**Operation Number:**	1001
NCR Number:	NA	**Quantity:**	1
Areas Inspected:	Weld area and welding zone (HAZ)	**Surface Conditions:**	AS WELDED
Nuclear Class:	2	**Thickness:**	VARIES
Procedure/Amendment (include revision):	FMP 2G31, REV 6		
Acceptance Criteria/Customer Spec/CSP (include revision):	APPENDIX A, CSP-78P174-MPR-22 Rev A		

Magnetic Particle Detail

Lighting Equipment:	LOCAL LIGHTING	**Lighting Scale:**	WHITE 100FC/1076 LUX MIN
Magnetic Particle Medium:	8A Red Dry	**Direction of Magnetic Field:**	Longitudinal
Magnetic Particle Med. batch:	16L025	**Amperage Used:**	9 AMP
Magnetization Method:	Yoke	**Current Type:**	AC
Equipment Type:	Y-7	**Number of Turns in Coil:**	NA
Number of Shots:	4	**Sequence of Operation:**	CONTINUOUS

Inspection Results

Inspection Results:	Accepted		
Comment:			
Inspection Date:	14-Feb-2019 14:28	**Qualification:**	SNT-TC-1A LEVEL II
		Revised By:	
Inspector Name:	Grommet, Philip E [AUTOSOL/FCV/MTWN]	**Revision Date:**	

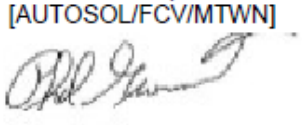
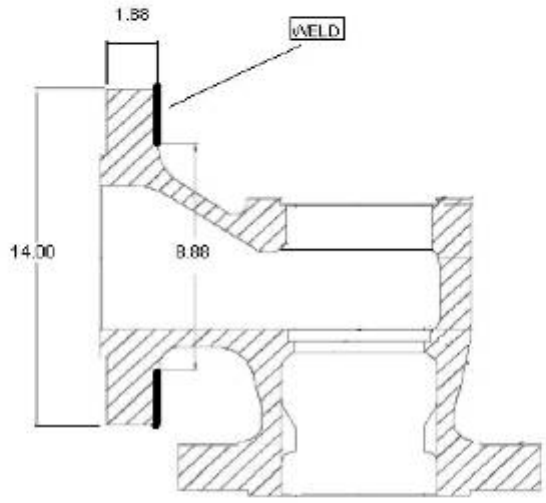


EXHIBIT 57 – WELD MAP

WELD TO ADD 1/8 INCH MATERIAL TO THE BACK FACE OF THE SIDE FLANGE.
THE DIMENSIONS SHOWN ARE PRIOR TO WELDING.



MAJOR WELD

	DATE 2/15/2012		**NCR.** 110009-1		
			MAP OPER. 014-9		
DRAWN BY:			**WELD OPER.** 016-9	**AM.**	NONE
			FMP 5CP5A.5AG1.1TSPN	**REV.**	3
CUSTOMER NO. 010 -P07945A 009		**SHOP ORDER** PA9621		**NHS/SHS/MPR NO.** 1009746-1	
SERIAL NO. AG9368-1	**HEAT NO.** FYCK	**S/N** 18		**VENDER** KEOKUK	
		PATTERN NO. 90B-2	**TYPE** EA	**SIZE** 6	
FISHER Marshalltown, Iowa	WELD MAP		**DWG. NO.** 2U3834		**REV.** D

EXHIBIT 59 – ACKNOWLEDGEMENT OF DOCUMENT REVISION

FISHER **Acknowledgement of Document Revision**

	Document Number	New Rev. Level	Document Number	New Rev. Level
PPR*				
MPR			ITR	
APR			ATR	

ANI Review (MPR & APR) _____ Date _____ QA Approval _____ Date _____

N or NPT Stamp? ☐ Yes ☐ No If Yes, ANI review required when Work Order has been assigned.

Value Stream Received _____ Date _____

Disposition Comments: _____

The above change was reviewed and:

☐ Does not require implementation for the reason noted. ☐ Requires implementation activities indicated below. ☐ Rework as required

Work Orders, Purchase Orders, and ATRs	IMPLEMENTATION ACTIVITES	VERIFICATION
	Assembly Work Order (Value Stream) _____ Update Assembly Work Order _____ Update ATR on Shop Floor (if applicable)	Signature _____ Date _____
	Work Order (Value Stream) _____ Update Work Order _____ Update ITR on Shop Floor (if applicable) _____ Update Master Routing	Signature _____ Date _____
	Purchasing _____ Update PPR on affected Purchase Orders _____ Update Drawing Rev on Receipt Traveler (if material has been received)	Signature _____ Date _____
Sign & date and return to QA Documentation when activities above have been completed. Process Coordinator _____ Date _____		

File Date _____ QA Approval _____ / Date _____ ANI Review (In process ITR & ATR) _____ / Date _____

* ANI Review not required for PPR's

Form 3487 Rev F (FMP2Q21)

EXHIBIT 60 – WORK ORDER TRAVELER

FISHER

EMERSON

Work Order Traveler / Identification Tag

Part Number
TYPE_9200_SERIES*28639177

Country of Origin
Category not found

Work Order Number
18743920

Part Name / Description
CONFIGURED ASSY VLVS.9200

Original Quantity
1

Material Reference Number / Specification

Scheduled Completion Date
18-JAN-19

Destination Subinventory
FG

Alternate Locations

Destination Location
FG.....

Kanban Card Number
N/A

Planner
MTN757

QUANTITY	COMPONENT	DESCRIPTION	MATERIAL	PATTERN
12	1H267228982	WASHER,LOCK,SPRING ~ NO.10,REGULAR	2898AM....	
1	12B6400X012	SERIAL PLATE, TYPE ROTARY SHAFT BODY	3898AM....	
1	16A4171X012	NAMEPLATE,NUCLEAR ~ ENG/UNIV-SH 1	3898AM....	
8	1C623728982	WASHER,LOCK,SPRING ~ 5/8,REGULAR	2898AM....	
8	1C2256A0012	WASHER,LOCK,SPRING ~ 1/4,REGULAR	2898AM....	
8	1A340828992	SCREW,MACH,RD HD ~ 10-24X0.38	2898AM....	

Work Order Number

18743920

********** Always keep this tag with the material **********

EXHIBIT 61 – RECEIPT TRAVELER

FISHER

EMR VLVS Receipt Traveler

EMERSON

PO/RMA: 4780068258 Source: TDS AUTOMATION INC Receipt: 5260073

Source Type: Supplier

Release No.: Freight Carrier: Buyer: THEIS, STEVEN J

LPN: Unit Weight: WEIGH & RECORD Country of Orig: US Receiver: STANLEY, SANDRA C

Line Number: 1 Project Nbr: Kanban Card Number: Destination Type: INVENTORY

Item Number: H1701025202 Rev: 0A Qty Received: 10 Each Receipt Routing: Standard Receipt

Item Desc: PLATE ~ 1 1/4 TO 1 1/2 SHAFT BRKT Due Date: 06-DEC-18

Material: 2896AM - STEEL/NON-WELD/FMS20B13 Receipt Date: 2018/12/03 13:56:52

Pattern: Qty Remain: 0

Process Code: Dist Qty:

Supplier Item:

Recv Subinv: NUCSTORES Recv Loc: NUINCOMING..... Dest. Person: OVERSTAKE, DENISE C

Primary Drwg: H17010

Supply Subinv: Supply Loc:

Nonconformances:

Supp Loc OHQ: NC No.: Date: Supplier: Qty: NC Description:

**** No Nonconformance history exists for this Item-Supplier Combination****

Rec Comment:

H17010 0A ENGINEERING DRAWING

Inspected By: _____ Heat: Lot:

Qty: _____ Moved To: _____ By: _____ Date: _____

Qty: _____ Moved To: _____ By: _____ Date: _____

EXHIBIT 65 – MINIMUM WALL THICKNESS REPORT

FISHER

Minimum Wall Thickness Report

EMERSON. Process Management

Reference FMP2B2.4

Part Information

Name: _____

Type: _____ PPR /MPR _____

Size: _____ Piece Serial No.: _____

Part No.: _____ Heat No.: _____

Procedure Used

FMP 2B2.4 Rev. _____

Figure used : _____

OR Attached Wall Thickness Drawing Sketch No. _____ Rev.: _____

Measurement Record

Section	Minimum Acceptable	Inspection Points 90 Deg Apart on Circular and Cylindrical Sections			
		1	2	3	4
A - A					
B - B					
C - C					
D - D					
E - E					

Results: ☐

Gages Used **Serial Number**

_____

_____

_____

_____

_____

Inspected by: _____ **Date:** February 13, 2019

Employee ID: _____

FMP2B2.4 Minimum Wall Report Rev K

EXHIBIT 67 - QUALITY ASSURANCE RECORDS INDEX

FISHER **Quality Assurance Records Index** EMERSON

ORACLE SALES NUMBER	1660481	LINE NUMBER	1.1	LBP ORDER NO	025-X215396
FISHER SERIAL NO.	F001810401	DATE	1/23/2019	CUST ORDER NO.	SNG10178810

TABLE 1

LIFETIME QUALITY ASSURANCE RECORDS

TYPE OF RECORD	COPY SUBMITTED TO CUSTOMER	LOCATION OF RECORD OR COPY
Index to Lifetime Records	If requested	Quality Documentation
Code Data Reports	With Code Item	Quality Documentation
Design Specification	Not submitted-Customer generated	Order Management
Design Report	Prior to shipment of Code Item	Research & Engineering
Design Drawings	Not submitted-proprietary	Research & Engineering
As-Built Drawings	Not submitted-proprietary	Research & Engineering
CMTR's & Traceability Info.	With Code Item	Quality Documentation
Heat Treatment Records	With Code Item	Quality Documentation
Final Hydro Test Results (ATR)	With Code Item	Quality Documentation
Final NDE Reports	With Code Item	Quality Documentation
Final Radiographs	With Code Item *	Quality Documentation
Repair Records (if req'd)	With Code Item	Quality Documentation
Weld Procedures	If requested	Manufacturing Engr.
Nonconformance Reports	If requested	Quality Documentation
Serial Card	No	Serial Card Room

TABLE 2

NONPERMANENT QUALITY ASSURANCE RECORDS

TYPE OF RECORD	COPY SUBMITTED TO CUSTOMER	LOCATION OF RECORD OR COPY	MINIMUM RETENTION TIME
Quality Program Manual	Only if required	Quality Documentation	3 Yrs. after superseded or invalidated
Design, Procurement, & QA Procedures	Only if required	Responsible Department	3 Yrs. after superseded or invalidated
NDE Procedures	Only if required	Mfg. Engr.	10 Yrs. after superseded or invalidated
Personnel Qualification Records	Only if required	QA Inspection & Mfg.	3 Yrs. after superseded or invalidated
Purchase Orders	Only if required	Procurement	10 Yrs. after superseded or invalidated
Audit & Survey Reports	Only if required	Quality Documentation	3 Yrs. after report completion
Calibration Records	Only if required	QA Inspection, Mfg. Engr.	Until recalibrated
Process Sheets, Checklists, Travelers	Only if required	Quality Documentation	10 Yrs after completion
Nonconformance Reports	Only if required	Quality Documentation	Identical to documents referenced in NCR
Weld Order Card (if required)	Only if required	Quality Documentation	10 Yrs after completion
Final Radiographs	See note below*	Quality Documentation	10 Yrs after completion
Certifying Engineer qualification records	Only if required	Nuclear Business Unit	3 years after superseded or invalidated

*All radiographs required by the Code shall be considered lifetime Q.A. records unless specified otherwise by the Owner's Design Specification.

EXHIBIT 72 – INTERNAL AUDIT REPORT

Fisher Controls International LLC Nuclear Internal Audit Report and Checklist
Marshalltown, Iowa

Report Page 1 of 6

INTERNAL AUDIT REPORT

Elements to be Audited	**Auditors**
All Sections of the Manual Specific Departments Audited: • Order Entry • Design • Purchasing • Inspection • Final Inspection and Test • Quality Engineering • Quality Documentation • ANI • Calibration • NDE • Welding • Supplier Control	
Signature Lead Auditor:	**Date:**
Audit Date:	**Re-Audit Due:** 2020
Description of Audit Scope	
Adherence to Nuclear Quality Assurance Manual Issue III Rev 15 dated 10/07/2016, NQA-1, NCA4000, 10 CFR Part 50 Appendix B, and 10 CFR Part 21 (FGS15B15.5)	
Summary of Audit Results (include a statement on the effectiveness of the Quality Assurance Program elements which were audited):	
The Quality Program was found to be effective and well implemented except for the areas listed below in the audit report section. CAR's will be issued for those areas found to be deficient (findings).	
Audit Acceptable (check one):	
[ ] Refer to attached Audit Report	**[ ] No adverse findings**
Approved_____ **Manager, Quality** **Date:**_____	
Approved_____ **VP Operations Americas** **Date:**_____	

EXHIBIT 73 - INTERNAL AUDIT PLAN

Fisher Controls International LLC Nuclear Internal Audit Report and Checklist
Marshalltown, Iowa

AUDIT PLAN

Audit Scope: Adherence to Nuclear Quality Assurance Manual Issue III Rev 15 dated 10/07/2016, Supporting procedures, 10 CFR Part 50 Appendix B, 10 CFR Part 21 and NQA-1.	**Auditors:** Eric McReynolds Preston Hardin Dan Zuelke Rick Miller Ron Cook Jason Russell Chris Gibson (Auditor in training) Jim Doonan (Auditor in training) Trevor Seibold Mike Ketcham Matt Anson Ken Wood (Auditor in training) Brian Sink (Auditor in training) Drew Wright (Auditor in training) Mel Gray (Auditor in training) Kristen Sheppard (Auditor in training)
Audit Date: April 8 – April 18, 2019	**Re-audit Date:** 2020
Signature Lead Auditor:	**Date:**
Requirements: Adherence to Nuclear Quality Assurance Manual Issue III Rev. 15, dated 10/07/2016	
Applicable Documents: Nuclear Quality Assurance Manual Issue III Rev. 15, dated 10/07/2016	
Elements to be Audited	
All Sections of the Manual Specific Departments Audited: • Order Entry • Design • Purchasing • Inspection • Final Inspection and Test • Quality Engineering • Quality Documentation • ANI • Calibration • NDE • Welding • Supplier Control	Corrective Actions issued during 2018 Internal Audit: 1853, 1854

Exhibit 74 - Personnel Record of Qualification

FISHER

Personnel Certificate of Qualification

EMERSON Process Management

Employee Name:	Connie J Zobel	Original Classification Certification Date:	7/28/2010
Employee ID:	5319	Eye Test Date:	11/4/2014
Clock Number:	5104	Date of Certification Expiration:	11/4/2017
Classification:	E112		
Hire Date:	4/30/1974		

Is Qualified to Perform

	Qualification	Re-Qualification		Qualification	Re-Qualification
INSPECTION CORE		X	**NUCLEAR CORE**		X
Final Inspection		X	Commercial Grade Item Dedication		X
Inprocess Inspection		X	Nuclear Assembly Inspection		X
Receiving Inspection		X	Nuclear Gauge Calibration and Usage		X
Rough Stock Inspection			WMP8X8.5		X
Weld Inspection			Leak Testing		X
PED / CUTR Inspection			Operational Testing		X
Tryout Inspection			Critical Dimension		
OSP / Inspection		X	Final Assembly Inspection		X
ASSEMBLY CORE		X	**EXPANDED CAPABILITES**		
Sliding Stem Assembly Inspection		X	CMM		
Rotary Assembly Inspection		X	PMI		X
level Trol Assembly Inspection			NDE		
Clean Area Assembly Inspection		X	Gage Center		
Desuper Heater Assembly Inspection			Optical Comparator		
			Romer Arm		
			Hardness Testing		X
			Spring Testing		X

Individual has meet the minimum education requirement, and received training in accordance with FMP 2K19 for the items listed above.

Basis for Certification consists of but is not limited to:

Supervised on the job training
Continued Satisfactory job performance
NQAM Training
QMSM Training
"S" and "R" Stamp QAM Training

Prepared and Reviewed By: _____ **Date:** _____
Quality Supervisor

Authorized By: _____ **Date:** _____
Manager, Quality

EXHIBIT 75 – CERTIFIED MATERIAL TEST REPORT

Certified Material Test Report

Customer's Name _____

Customer's P.O. No. _____

Fisher Controls Order No. : _____

Material Description: _____

Materials Organization (Manufacture): _____

Materials Organization (Supplier): _____

Fisher Controls P.O. No. : _____

Material Specification: _____

Heat Treated Condition: _____

Heat Number and Suffix No.: _____ Lot No. : _____

Piece Serial Number: _____ Traceability Code: _____

Chemical Composition:

Physical Properties:

Tensile Strength: Yield Strength: Elongation: Red./Area: Hardness:

Additional Test Results: Weld Repair:

Subcontracted Analysis, Test, Examination
Supplier Supplier Certification Identification (Attachments)

Fisher Controls International, Inc. hereby certifies the contents of this report are correct and accurate and that all test results and operations performed by us or our subcontractors are in compliance with the requirements of the referenced material specification and Section III, Division 1 of the ASME Boiler and Pressure Code _____Edition _____Addenda_____.

All operations have been performed by Fisher Controls International LLC in accordance with Certification of Authorization NPT #_____, expiration date_____.

Certified By: _____ Title: _____ Date: _____

EXHIBIT 77 PAGE 1 OF 2 – INDOCTRINATION AND/OR TRAINING FORM

EMERSON Process Management

GROUP TRAINING LOG

FISHER

Session Start Date: _____ **Session Completed Date:** _____

Presenter/s: _____

Originator: (if different than Presenter/s) _____

Course Title: _____

Category: (Required)

ONLY ONE course code per log.

DO NOT combine two or more course codes on one log.

Course Code		Type	Description
☐ I100	Business/Personal Dev	(Career Development, Written/Verbal Communication Skills, etc.)
☐ I200	Computer Skills	(Word, Excel, Powerpoint, Access, etc.)
☐ I300	Health	(Wellness Programs, Weight Loss Incentive Program, Smoking Cessation, etc.)
☐ I500	Quality	(Quality Orientation, Total Quality Involvement, etc.)
☐ I600	Safety	(PEO, Machine, Hazardous Materials, Accident/Injury Reporting, Industrial Hygiene, etc.)
☐ I001	On-the-Job Training	(Informal Training)
☐ I002	Accredited	(College Courses, Seminars)
☐ I003	Non-Accredited	(Seminars)
☐ I005	Specialized Dept Training Programs	(Technical)
☐ _____	_____	

PLEASE NOTE: PeopleSoft Empl ID (4-5 digit #) is required.
If you do not know your PeopleSoft Empl ID or not sure, please leave space blank.

Please Check One: Regular Employee	Co-op / Intern / STW	Contractor	Your Building Location	LEGIBLY PRINT FULL NAME	PEOPLESOFT EMP ID (required) Not Clock #	
☐	☐	☐				1
☐	☐	☐				2
☐	☐	☐				3
☐	☐	☐				4
☐	☐	☐				5
☐	☐	☐				6
☐	☐	☐				7
☐	☐	☐				8
☐	☐	☐				9
☐	☐	☐				10
☐	☐	☐				11
☐	☐	☐				12
☐	☐	☐				13
☐	☐	☐				14
☐	☐	☐				15
☐	☐	☐				16
☐	☐	☐				17
☐	☐	☐				18
☐	☐	☐				19
☐	☐	☐				20

Recordkeeping: Presenter/Originator should keep original and supporting documents for their file. If any course info is incomplete, log cannot be entered.
Presenter/Originator should send a copy of completed log only to the Human Resources Assistant responsible for your building for data entry. It will be destroyed after entry.

07/07 gl

EXHIBIT 77 PAGE 2 OF 2 - INDOCTRINATION AND/OR TRAINING FORM

NQAM Training Record Form

Fisher Controls **Marshalltown, IA**

Training Description: Quality Assurance Training

NQAM - Nuclear Quality Assurance Manual Issue III, Rev. 13, 11/15/2014

Required Sections: *	All Sections
* Includes all procedures referenced in manual sections or referenced in other procedures	

Employee Information:

NQAM Job Function: **Manufacturing & Quality Salaried Personnel**

Employee ID: _____ Print Name: _____

Employee Signature: _____ Date: _____

1. This is a record of self training.
2. Employee sign and date after reviewing all requirements.
3. Forward to Quality Manager, Governor Road.

Record Generated: 1/13/2015

EXHIBIT 78 – CERTIFICATE OF COMPLIANCE

Fisher Controls International, LLC
205 South Center Street
Marshalltown, Iowa 50158-2823 USA
Tel 1 (515) 754-3011
Fax 1 (515) 754-2830

Certificate of Compliance

Customer's Name: _____

Customer Order No.: _____

Fisher Order No.: _____

Material Manufacture's CMTR No.: _____ **(attach)**

Material Specification Number	Grade	Class	Type	Size

Material Heat Number: _____

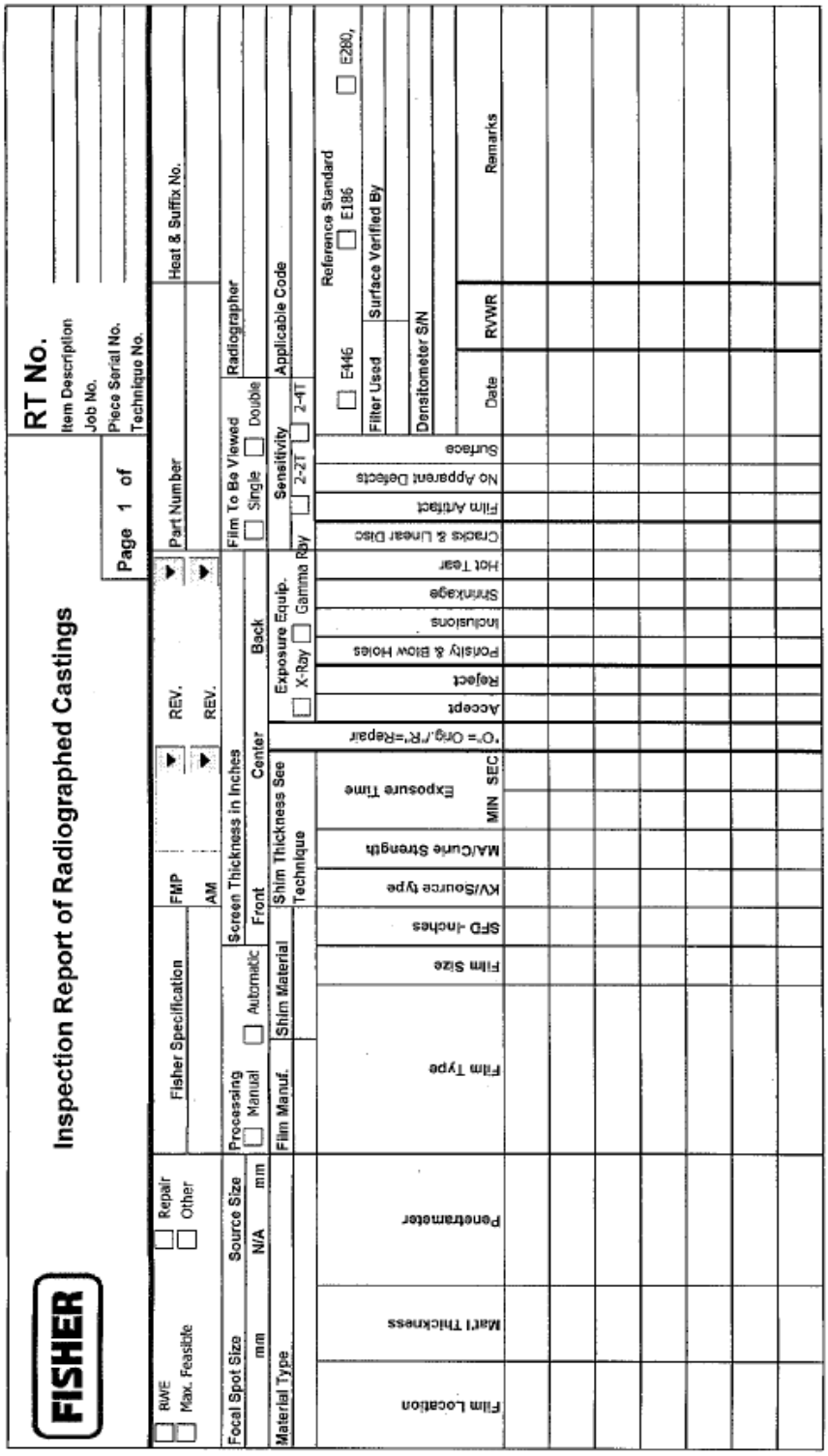
Fisher CMTR No.: _____ **(attach for activities performed by Fisher)**

Fisher Controls International, Inc. hereby certifies that the contents of this Certification of Compliance are correct and accurate and that all tests performed by us or our subcontractors are in compliance with the requirements of the referenced material specification and Section III, Division 1 of the ASME Boiler and Pressure Vessel Code _____Edition _____ Addenda Class_____.

All operations which have been performed by Fisher Controls International, LLC are in accordance with Certification of Authorization # 1930, expiration date 10-27-2013

Certified By: _____ **Title:** _____ **Date:** _____

EXHIBIT 79 – INSPECTION REPORT OF RADIOGRAPHY



FISHER

Inspection Report of Radiographed Castings

RT No.

Item Description
Job No.
Piece Serial No.
Technique No.

Page 1 of

RWE ☐ Repair ☐
Max. Feasible ☐ Other ☐

Fisher Specification | FMP | REV. | REV.

Part Number | Heat & Suffix No.

Focal Spot Size mm | Source Size N/A mm | Processing ☐ Manual ☐ Automatic | Screen Thickness in Inches Front Center Back | Film To Be Viewed ☐ Single ☐ Double | Radiographer

Material Type | Film Manuf. | Shim Material | Shim Thickness See Technique | Exposure Equip. ☐ X-Ray ☐ Gamma Ray | Sensitivity ☐ 2-2T ☐ 2-4T | Applicable Code

☐ E446 ☐ E186 ☐ E280, Reference Standard

Filter Used | Surface Verified By

Densitometer S/N

Film Location	Mat'l Thickness	Penetrameter	Film Type	Film Size	SFD -Inches	KV/Source type	MA/Curie Strength	Exposure Time MIN SEC	"O"= Orig./"R"=Repair	Accept	Reject	Porosity & Blow Holes	Inclusions	Shrinkage	Hot Tear	Cracks & Linear Disc	Film Artifact	No Apparent Defects	Surface	Date	RVWR	Remarks

Approved Fisher Controls:

Name | SNT Level | Date

Signature

Approved Customer:

Name | Date

Form 3801F

EXHIBIT 81 – ULTRASONIC TEST REPORT

EMERSON. Process Management

FISHER

Ultrasonic Test Report

UT No.	
Job No.	
Piece Serial No.	
Scan Plan No.	

Item Description	Fisher Specification	Part No.	FMP		Rev.	
			AM		Rev.	

Material Type/Grade	Heat No.	Surface Condition

Area Inspected ☐ 100% ☐ Other (See Scan Plan) Product Form ☐ Weld ☐ Material ☐ Other

Equipment

Instrument		Search Unit			
Manufacturer		Manufacturer		Serial No.	
Model		Size		Beam Angle	
Serial No.		Frequency		☐ Longitudinal ☐ Shear Wave	
Cable Type & Length		Couplant			

Accessories (if applicable)

Instrument Calibration

Calibration Method ☐ Back Reflection ☐ Calibration Block

Calibration Block	Type	Material	Manufacturer	Serial No.
☐ Flat ☐ Curved				
Instrument Gain (dB)	Damping	Reject Setting		

Calibration reference standard(s)	Type	Identification No.	Serial No.
Other-(if used attach cal sheet)			

Reference Reflector	Indication Amplitude (%FSH)	Distance Reading (Sound Path)

Evaluation

☐ Accept ☐ Reject

☐ No Relevant Indications

Indication Type

☐ Crack

☐ Incomplete Penetration

☐ Incomplete Fusion

☐ Other

Length of Indication

Comments

Evaluation of indications were made per paragraph _____ of FMP _____

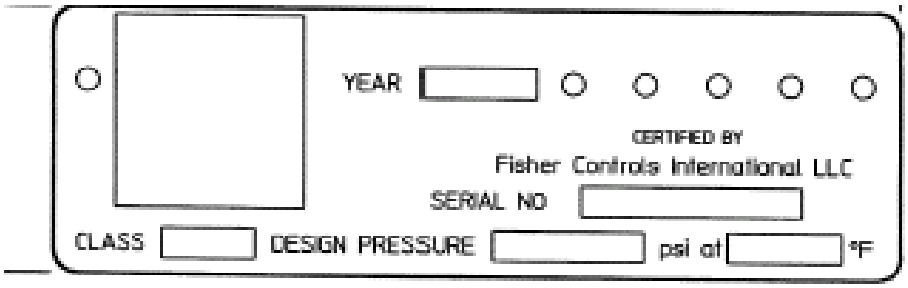
Performed by:

_____ Name _____ SNT Level _____ Date

_____ Signature

Form 2780F

EXHIBIT 82 – NAMEPLATES



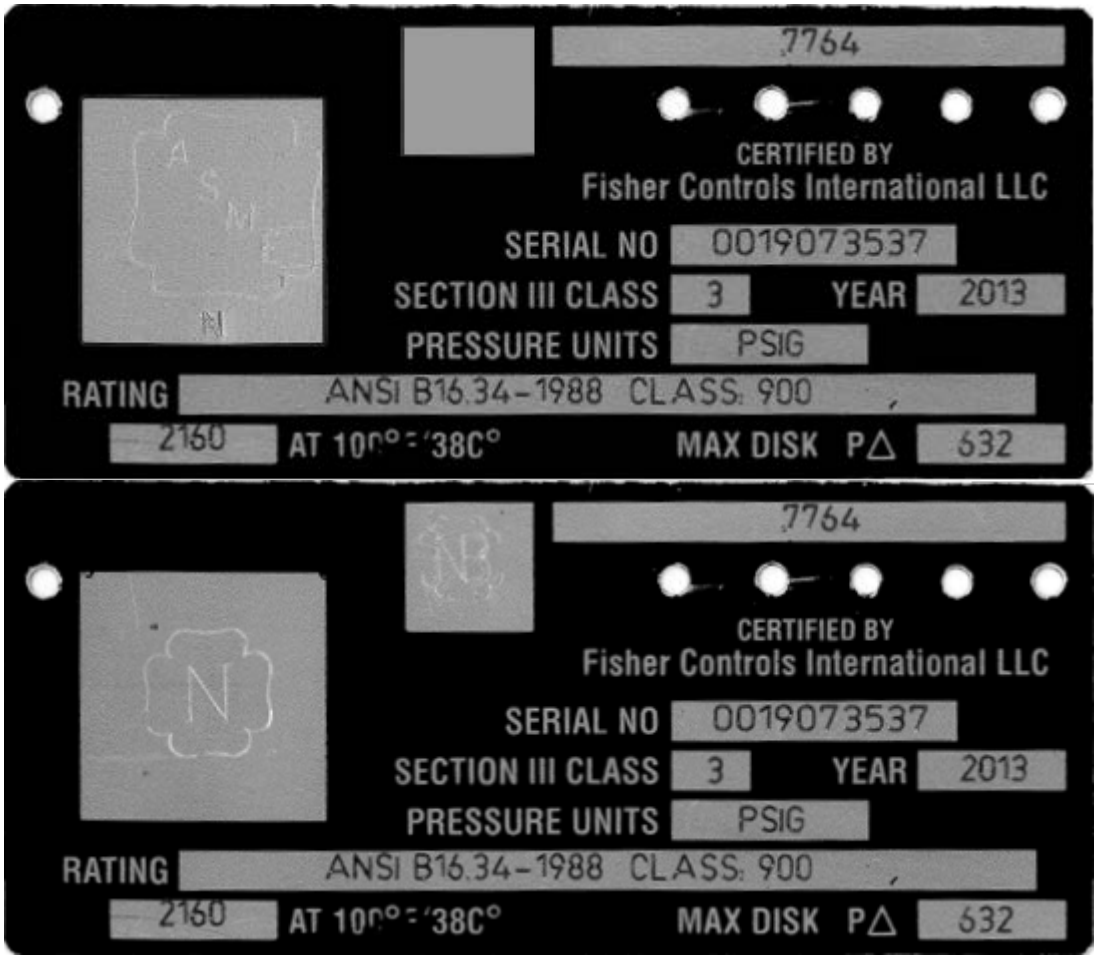


EXHIBIT 83 – ASSEMBLY QUALIFICATION FORM

Fisher Manufacturing Procedure FMP 2J2 Exhibit4 REV. 0

Exhibit 4

Assembly Qualification Form

EMERSON. Process Management

DIAPHRAGM TO CASE LEAK TEST

1. Read requisition and specifications.
2. Call Foreman.
3. Review requisition and specifications with Foreman and Inspector.
4. Prepare Topworx with test equipment.
5. Apply maximum casing pressure to Topworx.
6. Use water and soap mixture or leak test.
7. Cover casing completely including outside edge of diaphragm rubber.
8. If no leak occurs call inspector.
9. Sign requisition and ATR.

Date: _____

Type: _____

Serial Number: _____

Assembler: _____

Clock Number: _____

Qualified: Yes: ☐ No: ☐

Product Team Coordinator: _____

EXPIRATION DATE: _____

This is to certify that the above named assembler did successfully qualify for this activity. This evaluation of job performance meets the requirements of FMP 2J2.

Product Team Manager: _____
PRINT NAME SIGNATURE

EXHIBIT 84 – ENGINEERING CHANGE REQUEST / NOTICE

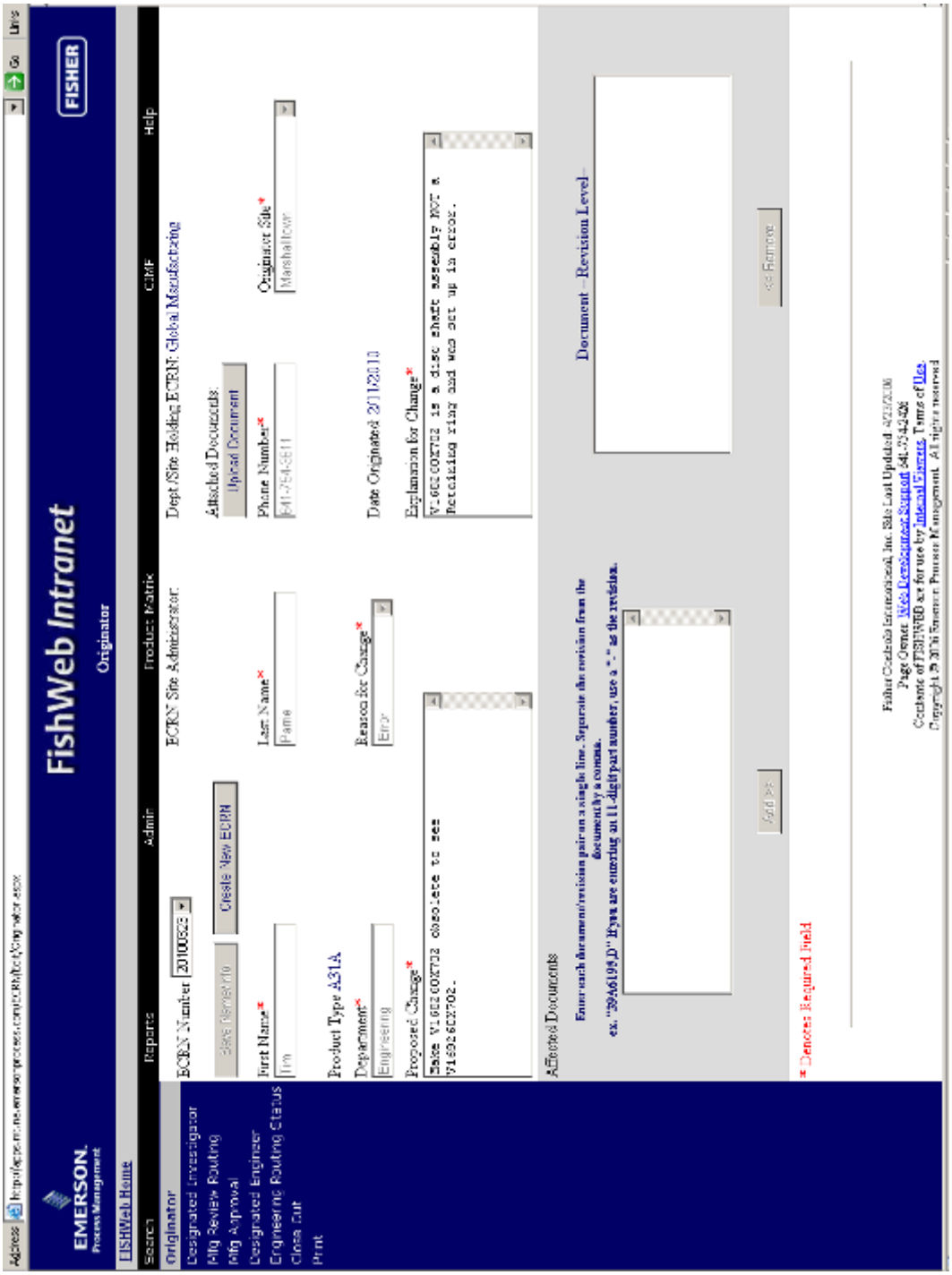


EXHIBIT 85 – CSP-QR

EMERSON Process Management

Specification CSP-QR001 Rev 4 Page 1 of 1

Nuclear Quality Program Restriction	Originator	Wes Ranard	Date	6/10/13
	Revised by	Ron Cook	Date	7/30/18
	Approved by	Jacob Clos	Manager Quality	

Adron Tool Corp

I. Scope
   a) When this specification is listed on a purchase order, supplier restrictions contained in this document are invoked.
   b) Fisher Controls – Marshalltown, IA or Instrument & Valve Services – Columbia Nuclear Quality Program Restrictions.
   c) Fisher Controls, as used in this document, shall mean the location that issued the purchase order, either Fisher Controls or Instrument & Valve Services.

II. Supplier Information:
   a) Vendor Number: 8823

III. Requirements and Restrictions:
   a) FGS15B13.0 (see purchase order for latest Rev.).
   b) General Requirements:
      1. Reasonable access shall be afforded to Fisher Controls' personnel and its agents to supplier and sub-supplier premises.
      2. Fisher Controls must be notified if M&TE / Standards are found to be out of tolerance to an extent that items for Fisher Controls may be affected.
   c) Service(s) or Item(s) Requirements:
      1. Item(s) identification and material traceability shall be maintained.
      2. Nonconformances related to the subcontracted service(s) or item(s) shall be promptly reported to Fisher Controls buyer for resolution.
      3. No welding shall be performed on the item(s). Item(s) shall not be subjected to a condition (heat, damage, etc.) which could affect the integrity of the material.
      4. Item(s) shall be packaged to prevent damage during return shipment to Fisher Controls.

IV. Quality Program:
   a) Quality Policy Manual dated 7/20/17

V. This restriction specifically applies the following location:
   a) N85 W13730 Leon Rd
      Menomonee Falls, WI 53051

EXHIBIT 87 – RECONCILIATION OF NONCONFORMANCES (CLASS 2 OR 3)

EMERSON. Process Management

Supplemental Non-Conformance Reconciliation for Design Report 11QN11-DR-01

Document No:	11QN11-DR-01.01	
Revision	A	
Prepared By:	TLS	02/16/2012
Checked By:	CWG	02/16/2012
Page:	2 of 5	

Revised By:

SUPPLEMENTAL NON-CONFORMANCE RECONCILIATION CERTIFICATION

Customer: Pacific Gas and Electric
Plant: Diablo Canyon Power Plant

Customer Purchase Order: 3500880829
Customer Design Specification: 8179, Rev. 2N

Code Year and Addenda
Design and Material: ASME B&PV Code, Section III, Division 1, 1989 Edition, No Addenda, CL 3
Other: ASME B&PV Code, Section III, Division 1, 1989 Edition, No Addenda, CL 3

Fisher Order: 019-F10040799
Fisher Item Number: 0003 (Software)
Nuclear Project Number: 1015379
Qualification Reference Number: 11QN11
Design Report Number: 11QN11-DR-01, Rev. A

Construction: 8" Class 150 Type A31A Wafer Butterfly Valve
Assembly Drawing: GE51567

Order Item	Serial Number	Tag Number
0001	19812744	SFS-2-8754

This is to certify, to the best of my knowledge and belief, that this Reconciliation Report is complete and accurate. In accordance with Paragraph NCA-3554 for the ASME Boiler and Pressure Vessel Code listed above, the referenced Non-Conforming Reports have been reviewed and do not affect the design report referenced above.

Prepared By:
Trevor Seibold
Qualification Engineer

Reviewed By:
Caleb Garten
Qualification Engineer

Approved By:
Scott Jones
Engineering Manager
Nuclear Business Unit

Date: February 16, 2012

EXHIBIT 88 – NUCLEAR APPROVED SUPPLIERS LIST

Marshalltown ASL by Supplier

Supplier Name / PO Name, Address / Survey or Audit Addres	Supplier No.	Type	Dates
Adron Tool Corp	8823	O/S or Parts (C G Survey)	
Purchasing Information: ADRON TOOL CORP N85 W13730 LEON ROAD P.O. BOX 960 MENOMONEE FALLS, WI 53051			**Completed:** 2/4/2010 **Due:** 2/28/2013 **Mat'l Org. Assesment Due:** NA
Survey or Audit Location: N85 W13730 Leon Rd Menomonee Falls WI, 53051			
Scope: Wire EDM and machining and control of material received.			
Quality Pgm. and Restrictions: QA Manual dated 7/14/2011. No welding or NDE.			
Anderson Laboratories	6314	O/S or Parts (C G Survey)	
Purchasing Information: ANDERSON LABS INC 6330 INDUSTRIAL LOOP GREENDALE, WI 53129			**Completed:** 1/26/2012 **Due:** 1/31/2015 **Mat'l Org. Assesment Due:** NA
Survey or Audit Location: 6330 Industrial Loop Greendale WI, 53129			
Scope: Performing testing dealing with spectroscopy, physical properties, microscopy, Charpy impact, tensile, metallographic weld qualification, and environmental simulation (corrosion testing).			
Quality Pgm. and Restrictions: Quality Policy Manual rev. K dated 10/12/2009. Fisher Controls must be notified if M&TE/Standards are found to be out of tolerance to an extent that report on items for Fisher Controls may be invalid. For material verification, provide certification with chemical and mechanical analysis.			
Anhui Yingliu	192M	NCA 3800 / Appendix B	
Purchasing Information: ANHUI YINGLIU ELECTROMECHANIC 566 FANHUA AVE HEFEI ECONOMIC/TECHNOLOGY DEVELOPM DEVELOPMENT ZONE ANHUI,CHINA 23060			**Completed:** 5/13/2011 **Due:** 5/31/2014 **Mat'l Org. Assesment Due:** 2012
Survey or Audit Location: No. 96 Pihe Road Hushnan Anhui, China, 237200			
Scope: Qualified Material Organization for the manufacture of ferrous and nonferrous castings to Class 3 ASME Section III Boiler and Pressure Code. Also includes NDE - PT and MT, welding, heat treatment and machining of product.			
Quality Pgm. and Restrictions: Quality Assurance Manual NQAM-01 Rev 0, dated March 5, 2010 ASME "MO" Certificate: QSC-612 expires 4/9/2013. (ONLY APPLIES TO PROCESS CODE 01) 10CFR Part 50 Appendix B and 10CFR Part 21 apply			

EXHIBIT 89 – MANUFACTURERS CERTIFICATION NUCLEAR SAFETY-RELATED ITEMS

FISHER

Manufacturer's Certification

Nuclear Safety-Related Items

Fisher Controls International
Marshalltown, Iowa 50158

Rev C

CSP-82P380

Issued to:	**PSEG ENERGY HOLDINGS INC**	**Date:**	**FEBRUARY 8, 2019**
Sales Order:	**1620573**	**Customer P.O. No.:**	**4501001373**

Fisher Controls certifies that items herein were designed, manufactured, and shipped in conformance and in compliance to contract specifications. All required tests and inspections were performed and the results found to be satisfactory. We further certify that all items shipped herein are free from defects in material and/or workmanship.
Parts are certified to be interchangeable in form, fit, function, and material with those originally supplied.
Parts and materials meet the requirements of _1998_/_1998_ (Code year / addenda) as specified.

Item No.	PL	Unit Serial / Piece Serial / Tag No.	Part Number or Config. Item	Item Description	Material
0010	A	AA045193	3R6081X0162	VEE-BALL – 8, CL300	SA351 CF8M/COCRA

All metallic trim parts were cleaned per NQA-1 Class C (FMP 7X5).
Our standard packaging is in accordance with NQA-1 Level C (Assemblies - FMP 11A2 or FMP 11A8, Parts - FMP 11A7) unless otherwise stated within this document.
Cure Date of elastomeric part is N/A
Expiration Date of standard shelf life of elastomeric part is N/A

Processing Levels (PL)

Level	Description	Controlling Documents
A	ASME Section III Code Parts (Pressure retaining)	Nuclear Q.A. Manual, plus FMP 2Q22
B	Non-Code, safety related parts 10CFR50 Appendix B applies	Nuclear Q.A. Manual, plus FMP 2Q22
C	Commercial Grade Item Dedicated, controlled under a 10CFR50 Appendix B Program	Nuclear Q.A. Manual, plus FMP 2Q22 and FMP 2K27

10CFR Part 21 applies to all Levels

Notes:
QTE: 17PQ148 REV 1
SN: 6688449-450
CUSTOMER DESIGN SPEC: S-2-1977-DSP-8138 REV 3
NO DESIGN CHANGES HAVE BEEN MADE WHICH WILL IMPACT ORIGINAL EQUIPMENT SEISMIC OR ENVIRONMENTAL OR BOTH QUALIFICATIONS.

Fisher Controls International, LLC Q.A. Documentation _____ _____
Q.A. Analyst Date

Printed in U.S.A.

Per Marshalltown NQAM Issue III, Rev. 15, 10/07/2016