ORGANIZATION: MASONEILAN-DRESSER
AVON, MASSACHUSETTS

REPORT NO.: 99900094/88-01	INSPECTION DATE: December 12-16, 1988	INSPECTION ON-SITE HOURS: 87

CORRESPONDENCE ADDRESS: Masoneilan North American Operations
Dresser Valve and Control Division
Dresser Industries, Incorporated
85 Bodwell Street
Avon, Massachusetts 02322

ORGANIZATIONAL CONTACT: Mr. William T. Allen III, Quality Manager
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NUCLEAR INDUSTRY ACTIVITY: The Dresser Valve and Control Division of Masoneilan North American Operations, Dresser Industries, Incorporated (Masoneilan-Dresser), manufactures ASME Section III valves and replacement parts.

ASSIGNED INSPECTOR: E T Baker for 3/27/89
J. J. Petrosino, Reactive Inspection Section No. 1 (RIS-1) Date

OTHER INSPECTOR(S): Mr. T. L. Tinkel, Sonalysts, Incorporated
Mr. C. J. Carroll, Sonalysts, Incorporated

APPROVED BY: Edward T Baker 3/27/89
E. T. Baker, Section Chief, RIS-1, Vendor Inspection Branch Date

INSPECTION BASES AND SCOPE:

A. BASES: Appendix B to 10 CFR Part 50, Section III of the ASME Boiler and Pressure Vessel Code and 10 CFR Part 21.

B. SCOPE: This inspection was performed as a follow-up to an October 21, 1988, 10 CFR Part 21 report from Consumers Power Company regarding valve internal replacement parts that were found in Masoneilan-Dresser (MD) valves, but were not manufactured by authorized MD facilities.

PLANT SITE APPLICABILITY: All sites.

A. VIOLATIONS:

1. Contrary to Section 21.21, "Notification of failure to comply or existence of a defect," it was identified that the MD 10 CFR Part 21 procedure (236-M-174, Revision B, dated May 2, 1987), requires individual employees to notify their supervisors of deviations or nonconformances only after the individual employees have determined that a "substantial safety hazard" exists. Additionally, the procedure states an incorrect definition of the 10 CFR Part 21 term "substantial safety hazard" (88-01-01).

   This is a Severity Level V violation (Supplement VII).

B. NONCONFORMANCES:

1. Contrary to Criterion IV, "Procurement Document Control;" Criterion VII, "Control of Purchased Material, Equipment and Services," of Appendix B to 10 CFR Part 50; Section 4, "Nuclear Procurement Control" of Revision J of the MD Nuclear QA Manual, and Sections QS2.2 and QS4, "Order Management and Procurement Control," of Revision G of the MD Commercial QA Manual (88-01-02):

   a. MD failed to ensure that adequate quality requirements were included or referenced on its PO documents to the contractors listed below even though the requirements of Appendix B to 10 CFR Part 50 and ANSI N45.2 were imposed on MD by the applicable licensee PO's listed below, and

   b. MD failed to ensure that its measures to control the POs listed included adequate provisions to use a MD approved supplier, have objective evidence of the quality of the hardware, and perform receipt inspections of the hardware.

Licensee/PO	Vendor	MD PO
Consumers Power Company 1007-9218-Q	Carpenter	PV-00016
Consumers Power Company 2003-0106-Q	Masoneilan-France	56859 56846 56964

Licensee/PO	Vendor	MD PO
Consumers Power Company 1007-8545-Q	Boston Centerless	B45-V23119
Public Service Gas and Electric P2-205090	Boston Centerless	18279
Commonwealth Edison 427281	Boston Centerless	A10-PV22955

C. UNRESOLVED/OPEN ITEMS:

1. QA Program Control

The inspector's observations and discussions with MD personnel appear to indicate that MD has failed to correctly implement its ANSI N45.2 and Appendix B quality assurance (QA) program requirements for parts or components that are exempt or outside the scope of Section III of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Section III). The majority of safety-related internal valve replacement parts are not pressure retaining and are therefore categorized as exempt from or outside the scope of Section III (e.g., valve stems, seat rings, cages and pins).

For those components and parts within the scope of Section III the NRC has accepted Section III as meeting the intent of Appendix B. However, nuclear safety-related parts and components exempt from or outside the scope of Section III are required to be manufactured and controlled under a QA program that meets the intent of Appendix B to 10 CFR Part 50. MD does not appear to be in compliance with this requirement. However, NRC inspectors did not complete their review of this issue. Therefore, this issue will be categorized as unresolved item (88-01-03).

2. Valve Actuator Sizing

The NRC inspectors briefly reviewed the methodology by which MD sizes its automatic valve actuators with emphasis on accounting for friction between the valve stem and the stem packing. Since this review was not completed, this issue will be categorized as an unresolved item (88-01-04).

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

Not reviewed during this inspection.

E. INSPECTION FINDINGS AND OTHER COMMENTS:

1. Entrance and Exit Meetings

The NRC inspection team informed the MD staff of the scope of the inspection during the entrance meeting conducted on December 12, 1988 and summarized its findings and concerns at the December 16, 1988 exit meeting. The scope of the inspection included:

a. review of the circumstances regarding the October 21, 1988 Consumers Power Company (CPC) 10 CFR Part 21 report;

b. review of the MD valve distributor network;

c. review of the relationship with sub-tier manufacturers such as Control Valve Specialties (CVS) and Cor-Val; and

d. obtaining information regarding differences that may be found between spare parts from the original equipment manufacturer versus secondary sources, and MD's manufacturing methodologies and controls.

2. Background

The CPC 10 CFR Part 21 report, dated October 21, 1988, identified suspect MD valve internal replacement parts that were found in a MD turbine bypass valve installed at CPC's Palisades nuclear plant facility. The CPC report identifies approximately 65 valve trim parts that were manufactured by vendors not recognized by MD as being authorized to manufacture MD valve trim parts. The circumstances of this matter are discussed in more detail in NRC Information Notice (IN) 88-97.

On December 16, 1988, the inspectors became aware of additional information that CPC identified to the Region III NRC staff which was submitted by CPC as supplemental information to the 10 CFR Part 21 report on December 22, 1988. The supplemental information stated, in part, that 6 of 97 valve pins examined were nonconforming in that they have undersized expanded diameters.

Five of these items were supplied by Masoneilan's Houston, Texas facility and the remaining item was supplied from H. H. Barnum, a previously authorized Masoneilan distributor. Additionally, 7 of 51 seat rings examined were nonconforming regarding manufacturing tolerances. The manufacturer of five of these items has not yet been identified. The two remaining, purchased in 1978, were manufactured by CVS. CVS was an authorized MD manufacturer and distributor in 1978.

3. 10 CFR Part 21 Implementation By MD

a. The inspector reviewed MD Procedure Number 236-M-174, Revision B, "Compliance with Federal Regulation 10 CFR Part 21," dated May 5, 1987. Some noted inconsistencies are as follows: (1) Part 21 defines the term, substantial safety hazard, as "a loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety for any facility or activity licensed...pursuant to...." The procedure incorrectly defined "substantial safety hazard" as "Possible exposure of personnel to 25 rems or more of radiation, and/or the release of radioactive material in concentrations which over 24 hours would exceed allowable limits." While these two examples are listed in NUREG-0302 under the definition of substantial safety hazard, other more pertinent examples are also listed under the definition, i.e., exceeding a safety limit as defined in the facility technical specifications; (2) The procedure requires individual employees to notify their supervisors of defects or noncompliance only after the individual employee has determined that a substantial safety hazard exists. This does not address the situation where an employee cannot make that determination and the deviation must be referred to the customer for evaluation; and (3) The procedure does not address Section 21.31, "Procurement Documents," of 10 CFR Part 21 (i.e., assuring that POs issued by MD, specify 10 CFR Part 21 if applicable).

The inspector concludes that the MD 10 CFR Part 21 implementing procedure is inadequate to assure that potentially reportable deviations are identified to management or that a potentially reportable problem is identified to the customer or licensee so that they may cause an evaluation to be performed. Violation 88-01-01 was identified in this area.

4. Purchased Material

The inspection team review of procurement packages for safety-related valve internal replacement parts and discussions with MD personnel identified some inconsistencies in the method in which MD implements its program. Discussions with MD quality assurance/quality control (QA/QC) personnel revealed that QC does not perform receipt inspection activities on bar stock material that may be used for the fabrication of safety-related parts and components with the exception of bar stock designated for Section III use. It was also noted that QA/QC personnel are not involved in the transfer of heat code numbers (i.e., material traceability) during the bar stock cutting process or verification of the transfer, with the exception of material identified as Section III valve body or bonnent material. The review of this area was not completed during the inspection and will be reviewed in more detail during a future inspection. As a result unresolved item 88-01-03 was identified.

Another inconsistency was that MD fails to pass on QA requirements of Appendix B to 10 CFR Part 50, ANSI N45.2, or Section III requirements imposed on them when purchasing either material to fabricate valve internal parts or to purchase safety-related valve internal replacement parts. It was noted that MD neither passes on nor requests any specific quality assurance program requirements from its sub-tier vendors or requires that the sub-tier vendor be on the MD approved supplier list. As discussed above, MD does not require its QA/QC personnel to perform receipt inspections or test materials that are received with the exception of material ordered for use in Section III valve body and bonnet fabrication.

Several PO packages (listed below) were identified for safety-related parts that were not processed in accordance with Appendix B to 10 CFR Part 50 although Appendix B was imposed by the customer. As a result Nonconformance 88-01-02 was identified during this part of the inspection.

Licensee/PO	Vendor	MD PO	Footnote
Consumers Power Co. 1007-9218-Q (July 31, 1987)	Carpenter	PV-0016	
Consumers Power Co. 2003-0106-Q (December 8, 1987)	Masoneilan France	56859 56846 56964	1 1 1
Consumers Power Co. 1007-8545-Q (June 24, 1987)	Boston Centerless	B45-V23119	2
Public Service Gas and Electric P2-205090 (April 8, 1987)	Boston Centerless	18279	
Commonwealth Edison 427281 (March 30, 1987)	Boston Centerless	A10-PV22955	

5. QA Program Review

MD has established and uses two types of QA manuals (QAMs) to control the operations at its Avon facilities. For Section III work activities, MD uses its nuclear QAM (NQAM), while non-Section III activities are covered by the MD commercial QAM (CQAM). Additionally, MD has a "near-nuclear" (NN) program which uses portions of both QAM's.

The nuclear program is currently governed by Revision J of the NQAM, dated June 1, 1987. The NQAM appears to comply with ASME Section III

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1 There was no objective evidence that MD (France) was an approved supplier. Also, the PO document used to obtain the material was not available for review. The MD engineer stated that this document would not be retained.

2 The plug, stem, and pin were not ordered by the Consumers Power Co., PO. However, MD supplied the additional parts and certified them to the PO requirements. MD's PO to Boston Centerless was not available because it was a commercial order and therefore not retained.

for Code items (i.e., pressure retaining as defined by the ASME Code). When Appendix B of 10 CFR Part 50 is imposed without the requirements of Section III, the NQAM states that Appendix B, ANSI N45.2 and ASME controls are implemented for manufacturing safety-related non-Code parts as agreed upon by MD and the purchaser. The NQAM states that non-Section III material for use in safety-related items is controlled by the CQAM.

Addendum 1 to the NQAM defines the MD NN QA program. Addendum 1 states that the NN QA program is used to manufacture safety-related items required to meet Section III requirements with the exception of applying the "N" stamp. Under the NN QA program, the provisions of the NQAM (less requirements for "N" stamp certification) are used to control the manufacture of pressure retaining parts. Addendum 1 also states that the non-pressure retaining parts are supplied in accordance with the CQAM. However, it should be noted that Nonconformance 88-01-02 indicates failures by MD to effectively implement a portion of its CQAM. Unresolved item 88-01-03 also discusses deficiencies in the overall MD program control.

The commercial quality assurance program is currently governed by Revision G of the CQAM, dated July 1, 1988. The previous revision of the CQAM, Revision F, is dated December 2, 1985. Revision F states that the commercial QA program meets the requirements of Appendix B to 10 CFR Part 50, ANSI N45.2, MIL-Q-9858A, and MIL-I-45208A for safety-related components as agreed upon by MD and the purchaser. Revision G of the CQAM does not state that it meets any QA standards or specifications.

In conclusion, it appears that MD has either relaxed, removed, or has not adequately imposed Appendix B type QA program controls over the MD activities regarding procurement, receipt inspection, and manufacturing processes for components that can be used in nuclear safety-related applications other than items designated as Section III pressure boundary items. Unresolved item 88-01-03 addresses this issue in part.

6. Secondary Source Manufacturers

The October 21, 1988, 10 CFR Part 21 report from CPC identified several secondary source manufacturers. One such manufacturer that was identified to the NRC was CVS of Houma, Louisiana. CVS was licensed by and contracted to MD from approximately September 1, 1975 until September 14, 1980 as an authorized manufacturer and

supplier of MD products. MD stated that it terminated all business relations with CVS in the 1980 time period and requested that all of its component drawings be returned. MD also stated that CVS did not return all of the MD drawings as requested. However, it was noted by the inspectors that MD has been routinely procuring components from CVS after the 1980 contract termination date, and is currently procuring carbide tipped valve plugs from CVS. Approximately eight orders were placed with CVS by MD in 1988. These orders appear to be all nonsafety-related.

The following is a summary of some of the information provided by MD to the inspection team regarding CVS:

a. In the mid-1970's, MD experienced some difficulty meeting required delivery schedules for customer spare parts due to many large orders in-house and because material was in short supply. CVS was apparently contracted as a licensed distributor and service representative for MD from September 1, 1975 until termination of the agreement on September 14, 1980 and was allowed to manufacture spare parts on an emergency basis for Masoneilan valves.

b. The MD Midwest Regional Sales Manager stated the primary function for CVS was to provide replacement valve parts for the petro-chemical industry located in the Texas-Louisiana area. CVS was not authorized to manufacture and sell valve parts to the nuclear power industry. Further, MD sales representatives were not authorized to buy replacement valve parts from CVS for the nuclear power industry. (Note: MD was not able to find a copy of its agreement with CVS. Therefore, the NRC inspector has not reviewed any of the contractual requirements discussed here).

c. The MD Sales Manager also stated that on some occasions MD gave tacit approval to MD sales representatives to buy replacement valve parts from secondary sources. This occurred when MD could not provide parts within the time required by the customer. MD sales representatives were then allowed to obtain parts from other sources.

d. As a result of the CPC 10 CFR Part 21 report, MD has initiated a plan to audit MD sales representatives to identify instances where parts were procured from secondary source manufacturers

and supplied to nuclear power plants. The QA Manager stated that he will notify the NRC of any problems similar to those identified in the Part 21 report.

7. MD Valve Trim Component Identification/Control

a. Identification - The following information was obtained during discussions with the MD personnel regarding identification of its valve internal replacement parts (valve trim):

(1) Each MD valve assembly is identified by a unique serial number. This serial number corresponds to a PO number, which tracks the specifications and requirements for the original valve. If the first two numeric digits of the order number are 44, the order was processed under the commercial QA program. If the first two numeric digits are 40, the order was processed under the near-nuclear QA program. Order numbers starting with an N indicate the order was processed under the nuclear QA program and met the requirements of Section III or the draft pump and valve code.

(2) MD does not need a customer name to identify a part number to provide a replacement part. The correct replacement part number can be identified by MD if they know the original valve serial number and the part name or description.

b. Part Number Control - The following MD policy and procedures regarding part number control were discussed:

(1) Policy and Procedure - The MD procedure for revising engineering documents, entitled "Revisions-Basic Practice," DMR-3-3, Revision E, dated July 27, 1982 was reviewed.

The procedure is applicable to revising engineering documents such as drawings and associated parts lists. The term revision is applied to any change after official release of an original drawing, parts list, or computerized method to generate the particular documents. The basic policy is that any change to any part or assembly that affects form, fit, function, or process that forces the part to be non-interchangeable with previous parts requires assignment of a new part number. Parts are

considered to be interchangeable if they possess such functional and physical characteristics as to be equivalent in performance and durability and capable of being exchanged one for the other without alteration of the items themselves.

(2) Part Numbering Systems - An attempt was made to obtain some historical perspective about the part numbering systems used by MD since the late 1960's. No procedure describes the system but, the following information was obtained from a MD Nuclear Product Engineer who has been with MD for over 30 years:

(a) MD part numbers consist of 12 digits. The last three digits represent the material code for the part. The material codes for commercial parts (i.e., no special requirements) are represented by combinations of three numeric digits. The material codes are explained in a MD Material Code Index.

(b) In the late 1960's, MD began using material code numbers 779 and 780 to distinguish parts that were subject to special requirements and controls. A 779 code identifies a commercial part that is subject to additional special requirements. This code means, "refer to the parts list." Depending on the requirements, the parts might be handled in accordance with either the nuclear or commercial QA programs. A 780 code identifies a commercial part that is subject to additional special requirements and is handled in accordance with the near-nuclear quality program.

(c) With the introduction of ASME Section III, MD adopted material code 781. This code is used for items produced in accordance with the nuclear QA program and Section III for both N stamp and non-N stamp items.

Note: These "special requirements" are usually not identified outside of MD.

(3) Alpha-Numeric Codes - In 1983 MD adopted an alpha-numeric material code for special material and material requirements not covered by the MD Material Code Index. This system replaced the previously used codes 779, 780, and 781.

The system for using three numeric digits for commercial part material codes was not changed. The alpha-numeric material code system is explained in E.S. 420, dated December 16, 1983. This document states:

(a) Alpha-numeric material codes are assigned to special material, special material requirements, non-destructive examinations, special welding procedures, mercury free processing, customer approval of weld repair, acid spot testing, and chemical and physical documentation not covered by the material code index.

(b) Commercial requirements have an alpha code in the 10th position of the part number (1st digit of the material code).

(c) Nuclear requirements have a numeral in the 10th position followed by an alpha character in either the 11th or 12th position of the part number (2nd and 3rd digit of the material code).

(4) Parts List - The parts list, Revision D, for a 20,000 Series, 4-inch, 900-psi, valve was examined to review an example of the implementation of the current MD part number system. The parts list identified various part numbers, drawings numbers (for Section III parts), part descriptions, quantities, and material specifications for each of the items in the valve assembly. The following parts were identified with an asterisk indicating material shall be manufactured and certified in accordance with the requirements of Article NC-2000 (Class 2) for Section III.

- Body
- Body Studs and Nuts
- Plug
- Bonnet and nipple

The external valve parts were identified with a nuclear alpha-numeric material code. The remaining parts were identified with a three digit numeric material code indicating the parts are to be commercial grade.

8. Differences between Original Equipment Manufacturer (OEM) and Secondary Source Parts

One issue reviewed during the inspection was whether technical and/or quality differences exist between commercial grade parts manufactured by the OEM for nuclear power applications and commercial grade parts manufactured by secondary sources. This particular concern is currently limited to secondary source commercial parts that may find their way into nuclear power plants.

Differences can exist depending on how the original valve was procured and how the current replacement parts are being ordered. However, sufficient information is not currently available to evaluate the impact of these differences on valve operability or plant safety. The following comments apply:

a. For a secondary source to have the capability of correctly producing a commercial grade part for a MD valve in a nuclear application, three basic items are required. First, the secondary source needs to have sufficient technical information (e.g., detailed drawing, and design tolerances) to produce the commercial grade part. Because of MD's prior relationship with CVS and because MD occasionally uses sub-tier vendors for machining commercial parts some secondary source manufacturers may have copies of the original MD drawings. Next, the secondary source needs to know what supplemental requirements were applicable to the original nuclear valve order and whether these requirements are applicable to the particular part to be made. Information on the original valve order is controlled by MD and may not be generally available to the power plant or the secondary source. Third, the secondary source would have to implement a quality program that is equal to or better than the one used by the OEM.

b. During the inspection, the NRC inspectors looked for specific examples of supplementary requirements that could result in differences between a commercial grade part that could be used in a nuclear application and the same commercial grade part used in a commercial application. A few specific examples identified during the inspection include: Seat rings for commercial applications were typically used as is but for nuclear applications the seat rings were subjected to NDE and sometimes hard facing. Plugs for strictly commercial applications were used as is, for nuclear applications the plugs are subjected to NDE.

c. Some QA/QC differences also arise from requirements invoked in the original equipment specifications or may be the inherent result of the quality program being used. The requirements leading to quality differences may not be available to secondary source manufacturing, such as:

- Requirements to provide written certification of compliance with specification requirements.
- Requirements to use material from qualified (or approved) suppliers with documented certified material test reports from sub-tier vendors.
- Requirements for receipt inspection and material control and identification during manufacture and stocking.
- Procedures for order entry and processing that involve review of original equipment specifications for requirements applicable to the current order.

d. One last consideration is that some secondary source manufacturers may be using reverse-engineered drawings (i.e., drawings prepared by measuring parts manufactured by the OEM or other secondary source spare parts). Reverse engineered drawings can lead to differences, especially for dimensional tolerances. Design tolerances cannot usually be identified by a single inspection of a finished part.

9. Review of MD Contracts

The inspectors conducted a review of MD's contract with their industrial sales representatives, their marketing releases, and executive correspondence concerning sales of nuclear products or sales for use in nuclear power plants. The contract currently in effect was instituted in 1986 shortly after Dresser Industries acquired Masoneilan from McGraw-Edison. There were no copies available of contracts which were in effect prior to 1986; therefore, a review could not be performed.

The current contract does not procedurally specify an explicit method to be used when processing a nuclear plant order. The MD QA manager stated that the sales representatives were instructed to pass all orders from nuclear power plants on to MD's Avon facility to determine if the part was nuclear or commercial grade. He provided two MD memorandums that were transmitted to MD's sales representatives:

a. Memo ASM-24-86-DF, dated May 8, 1986. This memo states, in part: "All inquiries and orders, REGARDLESS of product type, for Nuclear related parts and/or complete equipment are to be directed to Avon Contract Administration."

b. Memo ADM-25-880, dated August 15, 1988. This memo states, in part: "All inquiries and orders, REGARDLESS of product type or that requires delivery, for nuclear related parts and/or complete equipment are to be directed to AVON Contract Administration and clearly marked "NUCLEAR."

The MD memorandums specifically state that nuclear related part orders should be passed to the Avon facility. However, the exact definition of nuclear related parts is open to interpretation. The Midwest sales manager when questioned, stated that it was possible for an experienced MD sales representative to feel capable of determining if a part order from a nuclear plant was for a safety-related system himself. He might then decide to fill the order from his stock which could contain non-authorized substitute replacement parts. Therefore, whether a nuclear plant receives an authentic MD part or a secondary source part is dependent in part on the MD sales representative's handling of that order.

Another contractual aspect reviewed was whether MD sales representatives were required to carry exclusively MD products or if they could carry competitors products or secondary source parts. A review of the contract identifies that it does not in itself preclude the MD representative from dealing with competitors or secondary source suppliers.

In conclusion, it is possible for an NRC licensee to receive non-genuine MD parts from an authorized MD sales representative. The responsibility of assuring the adequacy of purchased material and their conformance to the procurement documents therefore, rests with the NRC licensee.

10. Additional MD Information

The following items were noted during discussion between MD and NRC personnel.

a. The MD Avon, MA facility is one of several located around the country and around the world. Other facilities within the United States include the MD Instrument Division in Canton, MA, a MD warehouse/valve refurbishment facility and distribution center in Houston, TX, and another MD manufacturing facility in Montebello, CA. The Montebello facility is engaged in Air Force and NASA work.

b. MD has been providing equipment to the commercial nuclear power industry for about 25 years. MD valves are used in a wide variety of safety-related and nonsafety nuclear applications. Masoneilan's 21,000 Series, 40,000 Series, and 41,000 Series sliding stem valves are used in nuclear power plants.

c. MD maintains N and NPT stamps (Nos. 1836 and 1837), currently expiring August 1989. These stamps are used when ASME certification of valves or replacement parts is requested by a MD customer. MD also supplies valves that meet ASME Section III without ASME N stamp certification.

d. Prior to the introduction of Section III, MD supplied commercial valves (usually with some type of upgrade) to nuclear power plants. These valves were used in both safety-related and nonsafety-related applications.

ORGANIZATION: MASONEILAN-DRESSER
AVON, MASSACHUSETTS

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F. PERSONNEL CONTACTED:

NAME	TITLE
*P. H. Sanford	Manager, Massachusetts Operations
*W. T. Allen, III	Quality Manager
R. Brundy	Service Representative
C. A. Canestrari	Senior Buyer
A. Declellis	Final Tester
D. Ellis	Service Representative
K. Juncewicz	Regional Manager
*J. A. Kerr	QA Engineer
E. Kramer	Nuclear Product Engineer
E. Meagher	Receipt Inspector
J. Powell	QC Supervisor
J. Ravezi	Material Receiver/Handler
R. Rohm	Valve Assembly Supervisor

*present during exit meeting