UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 28, 2024

Mr. Kevin Falcon
Quality Engineering Manager
ASCO L.P.
1561 Columbia Hwy
Aiken, SC 29801

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF ASCO L.P. NO. 99901054/2024-201, AND NOTICE OF NONCONFORMANCE

Dear Mr. Falcon:

On May 6 – 10, 2024, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the ASCO L.P.'s (hereafter referred to as ASCO) facility in Aiken, SC. The purpose of this limited-scope routine inspection was to assess ASCO's compliance with provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," and selected portions of Appendix B, "Quality Assurance Program Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

This technically focused inspection specifically evaluated ASCO's implementation of quality activities associated with the supply of safety-related solenoid valves, temperature, and pressure switches, hydramotors, refurbishment/repairs, and spare parts for U.S. nuclear power plants. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC endorsement of your overall quality assurance (QA) or Part 21 programs.

During this inspection, the NRC inspection team found that the implementation of your QA program failed to meet certain regulatory requirements imposed on you by your customers or NRC licensees. Specifically, the NRC inspection team determined that ASCO was not fully implementing its QA program in the areas of training, control of special processes, and control of measuring and test equipment. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter. In response to the enclosed Notice of Nonconformance (NON), ASCO should document the results of the extent of condition review for the findings and determine if there are any effects on other safety-related components.

Please provide a written statement or explanation within 30 days from the date of this letter in accordance with the instructions specified in the enclosed NON. We will consider extending the response time if you show good cause for us to do so.

In accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's document system (ADAMS), accessible at http://www.nrc.gov/reading-rm/adams.html

To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material be withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information would create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of safeguards information: performance requirements."

Sincerely,

Armstrong, Aaron signing on behalf of Kavanagh, Kerri on 06/28/24

Kerri Kavanagh, Chief
Quality Assurance and Vendor Inspection Branch
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

Docket No.: 99901054

EPID No.: I-2024-201-0024

Enclosures:
1. Notice of Nonconformance
2. Inspection Report No. 99901054/2024-201 and Attachment

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF ASCO L.P. NO. 99901054/2024-201, AND NOTICE OF NONCONFORMANCE: June 28, 2024

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NAME	YDiaz-Castillo (MFitzgerald for)	BHughes	KKavanagh (AArmstrong for)
DATE	6/20/2024	6/24/2024	6/28/2024

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NOTICE OF NONCONFORMANCE

ASCO L.P.
1561 Columbia Hwy
Aiken, SC 29801

Docket No. 99901054
Report No. 2024-001

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the ASCO L.P.'s (hereafter referred to as ASCO) facility in Aiken, SC, from May 6, 2024, through May 10, 2024, ASCO did not conduct certain activities in accordance with NRC requirements that were contractually imposed on ASCO by its customers or NRC licensees:

A. Criterion II, "Quality Assurance Program," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "The program shall provide for the indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained."

   ASCO's Quality System Manual (QAM), Revision U, dated November 30, 2023, states, in part, that "All personnel working on the nuclear products go through an annual nuclear training program and other job-related training necessary to achieve and maintain proficiency."

   ASCO's procedure No. QC-ER-080, "Training and Qualification of Q.A. Personnel," states, in part, that, "All qualification training and formal education is documented for each inspector and Quality Engineer utilizing a certification form. These certifications are reviewed and approved by ASCO Quality Assurance Management."

   Contrary to the above, as of May 10, 2024, ASCO failed to provide for the training of personnel performing manufacturing and special process activities as necessary to assure that suitable proficiency is achieved and maintained. Specifically, ASCO failed to establish adequate training requirements for personnel performing manufacturing activities and special processes activities and adequately document training for those personnel performing activities affecting quality. ASCO could not provide objective evidence that soldering, and laser welding personnel were adequately qualified to perform these activities.

   This issue has been identified as Nonconformance 99901054/2024-201-01.

B. Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50 states that "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements."

   ASCO's QAM states, in part, that "Qualified personnel using qualified written procedures in accordance with applicable industry codes, standards and requirements shall perform special processes that could affect the quality of items."

ASCO's Manufacturing Procedure (MP) No. MP-AK-205, "Procedure for In-Process Audit of the Laser Welding Process," Revision C, dated September 9, 2017, establishes the requirements for performing an in-process audit of the laser welding process of the Sol-Base sub-assemblies (SBSA) will meet the specific criteria/requirements as outlined in written procedures, work instructions, and engineering assembly drawings. Step 1 in MP-AK-205 states that "Quality Assurance inspection personnel are responsible in performing a minimum of three in-process audits weekly of the laser welding process. If a nuclear SBSA 276226 or 432910 is to be welded, an in-process audit must be performed on that order and will count as one of the minimum 3, weekly."

ASCO's MP No. MP-AK-202, "Procedure for Describing the Methods Used to Check the Quality of the Laser Welded Joint on Nuclear SBSA 276226/432910," Revision C, dated September 6, 2017, requires ASCO to measure the welded joints to ensure it meets the dimensional requirements from the engineering specifications. MP-AK-202 also requires ASCO to perform: (1) a strength test to ensure the welded joints can withstand the required axial load; and (2) a leakage test to ensure the welded joints do not exceed the maximum allowable leakage.

Contrary to the above, as of May 10, 2024, ASCO failed to assure that special processes were controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable standards, specifications, criteria, and other special requirements. Specifically, ASCO did not perform the minimum three weekly in-process audits of the laser welding process. Furthermore, ASCO did not perform the required dimensional measurements, and axial load and leakage testing on the laser welded joints for valve SBSA 432910 to ensure they met the required engineering specifications.

This issue has been identified as Nonconformance 99901054/2024-201-02.

C. Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50 states that "Measures shall be established to assure that tools, gages, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits."

ASCO's QAM, states, in part, that "Measurement and Test Equipment provide documented evidence that calibration is traceable to the National Institute of Standards Technology." Each device is subject to a periodic system of checking and calibration based upon usage and wear." In addition, the QAM also states that "Individual gage records are maintained for all measurement and test equipment."

Contrary to the above, as of May 10, 2024, ASCO failed to assure that tools, gages, instruments, and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits. Specifically, ASCO did not perform calibration of a load cell used to verify the strength of a laser weld. In addition, ASCO could not provide objective evidence that the weight used to test the mechanical joints on solder cup terminals was properly controlled.

This issue has been identified as Nonconformance 99901054/2024-201-03.

Please provide a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Chief, Quality Assurance and Vendor Inspection Branch, Division of Reactor Oversight, Office of Nuclear Reactor Regulation, within 30 days of the date of the letter transmitting this Notice of Nonconformance. This reply should be clearly marked as a "Reply to a Notice of Nonconformance" and should include for each noncompliance: (1) the reason for the noncompliance or, if contested, the basis for disputing the noncompliance; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further noncompliances; and (4) the date when the corrective actions will be completed. Where good cause is shown, consideration will be given to extending the response time.

In accordance with the requirements of 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," of the NRC's "Rule of Practice," your response will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC's Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information.

If you request that such material be withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21, "Protection of safeguards information: performance requirements."

Dated this 28th day of June 2024.

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
DIVISION OF REACTOR OVERSIGHT
VENDOR INSPECTION REPORT

Docket No.:	99901054
Report No.:	99901054/2024-201
Vendor:	ASCO L.P. 1561 Columbia Highway Aiken, SC 29801
Vendor Contact:	Mr. Kevin Falcon Quality Engineering Manager Phone: 1-803-641-9368 Email: kevin.falcon@emerson.com
Nuclear Industry Activity:	ASCO L.P.'s scope of supply includes safety-related solenoid valves, temperature and pressure switches, hydramotors, refurbishment/repairs, and spare parts.
Inspection Dates:	May 6 – 10, 2024

Inspectors:			
	Michael Fitzgerald	NRR/DRO/IQVB	Team Leader (Training)
	Yamir Diaz-Castillo	NRR/DRO/IQVB	Team Leader
	Frankie Vega	NRR/DRO/IQVB	
	Yiu Law	NRR/DRO/IQVB	Remote

Approved by:	Kerri Kavanagh, Chief Quality Assurance and Vendor Inspection Branch Division of Reactor Oversight Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

ASCO L.P.
REPORT NO. 99901054/2024-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a limited-scope routine vendor inspection at the ASCO L.P.'s (hereafter referred to as ASCO) facility in Aiken, SC, to verify that it had implemented an adequate quality assurance (QA) program that complies with the requirements of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," and 10 CFR Part 21, "Reporting of Defects and Noncompliance." The NRC inspection team conducted this inspection on-site on May 6 – 10, 2024. This was the fourth NRC inspection of ASCO conducted at this facility.

This technically focused inspection specifically evaluated ASCO's implementation of the quality activities associated with the design, fabrication, testing, and commercial-grade dedication. ASCO's scope of supply is safety-related solenoid valves, temperature and pressure switches, hydramotors, refurbishment/repairs, and spare parts for U.S. NRC regulated facilities.

Specific activities observed by the NRC inspection team during this inspection included:

- Complete assembly, external and seat leakage testing (e.g., coil and flow), and final inspection activities associated with two safety-related solenoid valves (3-way, 120/60 VAC – Manufacturer part number – NPEF8300142EG).
- Calibration activities associated with an indicator (DI-10496-46) and a pressure gage (PR-1).
- Commercial-grade dedication of stainless-steel bracket, coils, O-ring, and a solenoid.

The following regulations served as the bases for the NRC inspection:

- Appendix B to 10 CFR Part 50
- 10 CFR Part 21

During this inspection, the NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated February 10, 2023; IP 43004, "Inspection of Commercial-Grade Dedication Programs," dated February 10, 2023; and IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting of Defects and Noncompliance," dated February 10, 2023.

With the exception of the nonconformances identified below, the NRC inspection team concluded that ASCO's QA policies and procedures comply with the applicable requirements of Appendix B to 10 CFR Part 50 and 10 CFR Part 21, and that ASCO's personnel are implementing these policies and procedures effectively. The results of this inspection are summarized below.

Training and Qualification

The NRC inspection team issued Nonconformance 99901054/2024-201-01 for ASCO's failure to implement the regulatory requirements of Criterion II, "Quality Assurance Program," of Appendix B to 10 CFR Part 50. Nonconformance 99901054/2024-201-01 cites ASCO for failing

to provide training of personnel performing manufacturing activities and special processes activities, as necessary, to assure that suitable proficiency is achieved and maintained. Specifically, ASCO failed to establish adequate training requirements for personnel performing manufacturing and special processes activities and adequately document training those personnel these activities affecting quality. ASCO could not provide objective evidence that soldering, and laser welding personnel were adequately qualified to perform these activities. ASCO initiated Internal Corrective/Preventative Action Report (ICAR) No. I-05092024-07 to address these issues.

Control of Special Processes

The NRC inspection team issued Nonconformance 99901054/2024-201-02 for ASCO's failure to implement the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50. Nonconformance 99901054/2024-201-02 cites ASCO for failing to assure that special processes were controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable standards, specifications, criteria, and other special requirements. Specifically, ASCO did not perform the minimum three weekly in-process audits of the laser welding process. Furthermore, ASCO did not perform the required dimensional measurements, and the axial load and leakage testing on the laser welded joints for valve SBSA 432910 to ensure they met the required engineering specifications. ASCO initiated ICAR Nos. I-050924-06, and I-050924-08 to address these issues.

Control of Measuring and Test Equipment

The NRC inspection team issued Nonconformance 99901054/2024-201-03 for ASCO's failure to implement the regulatory requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. Nonconformance 99901054/2024-201-03 cites ASCO for failing to control measuring and test equipment. Specifically, ASCO failed to calibrate a load cell used to verify the strength of a laser weld. In addition, ASCO could not provide any objective evidence the weight used to test the mechanical joints on solder cup terminals was properly controlled. ASCO initiated ICAR I-050924-08 to address these issues.

Other Inspection Areas

The NRC inspection team determined that ASCO established its programs for design control, commercial-grade dedication, material traceability, test control, nonconforming material, parts, or components, corrective action, and internal audits, in accordance with the applicable regulatory requirements of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed and activities observed, the NRC inspection team also determined that ASCO is implementing its policies and procedures associated with these programs. In addition, the NRC inspection team determined that ASCO is implementing its 10 CFR part 21 program for evaluating deviations and reporting defects that could create a substantial safety hazard in accordance with the applicable regulatory requirements. No findings of significance were identified in these areas.

REPORT DETAILS

1. Training and Qualification

   a. Inspection Scope

   The U.S. Nuclear Regulatory Commission (NRC) inspection team reviewed ASCO L.P.'s (hereafter referred to as ASCO) policies and implementing procedures that govern the implementation of its training program to verify compliance with the regulatory requirements of Criterion II, "Quality Assurance Program," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Title 10 of the Code of Federal Regulations (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." Specifically, the NRC inspection team reviewed policies and procedures pertaining to the training of personnel performing manufacturing activities affecting quality and performing special processes to assure that suitable proficiency is achieved and maintained. The NRC inspection team reviewed a sample of personnel training and qualification records for Quality Control (QC) inspectors, auditors, valve assemblers, solder and laser welder technicians, calibration laboratory technicians, and engineers.

   The NRC inspection team also discussed the training and qualification program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

   b. Observations and Findings

   The NRC inspection team observed that ASCO's Quality System Manual, Revision U, dated November 30, 2023, and associated procedures do not specify the requirements for training, including refresher training, for personnel performing manufacturing and special processes activities. The NRC inspection team noted that ASCO's did established training requirements and records for quality personnel performing activities affecting quality such as testing, inspections, and auditing. The training requirements and records for theses personnel adequately demonstrated the training and qualification of those personnel. However, ASCO did not establish adequate measures to ensure soldering or laser weld technicians are qualified to perform their required job responsibilities and document these activities affecting quality. The NRC inspection team identified that the training records from 2020 to present for the individuals performing soldering or laser weld activities did not establish adequate training requirements or document the training to ensuing suitable proficiency is achieved and maintained. Also, ASCO could not provide objective evidence that these manufacturing and special processes personnel's proficiency was achieved and maintained.

   The NRC inspection team determined identified this issue as Nonconformance 99901054/2024-201-01 for ASCO's failure to provide training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained. ASCO initiated Internal Corrective/Preventative Action Report (ICAR) No. I-05092024-07 to address these issues.

c. Conclusion

The NRC inspection team issued Nonconformance 99901054/2024-201-01 for ASCO's failure to implement the regulatory requirements of Criterion II of Appendix B to 10 CFR Part 50. Nonconformance 99901054/2024-201-01 cites ASCO for failing to provide training of personnel performing manufacturing and special processes activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

2. Control of Special Processes

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its control of special processes program to verify compliance with the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50.

ASCO's special processes are limited to soldering and laser welding. The soldering was performed on components, terminal block assemblies, and hydramotors assemblies. The laser welding, which was an automated welding process, was performed on the plug nut/end cap of the tube in the stationery part of the magnetic circuit of the solenoid valves. During the week of the inspection, there were no soldering or laser welding activities being performed on safety-related components. The NRC inspection team performed a walkthrough of the soldering and laser welding areas where ASCO personnel went through the steps for conducting the soldering and welding. The NRC inspection team also reviewed a sample of soldering and welding records.

The NRC inspection team also discussed the control of special processes program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

The NRC inspection team identified one nonconformance and one minor issue associated with ASCO's implementation of its control of special processes. The nonconformance and minor issue are described below.

ASCO's Manufacturing Procedure (MP) No. MP-AK-205, "Procedure for In-Process Audit of the Laser Welding Process," Revision C, dated September 9, 2017, established the requirements for performing an in-process audit of the laser welding process of the Sol-Base sub-assemblies (SBSA) to ensure it will meet the specific criteria/requirements as outlined in written procedures, work instructions, and engineering assembly drawings. The NRC inspection team observed that Quality Assurance inspection personnel are responsible in performing a minimum of three in-process audits weekly of the laser welding process. If a nuclear valve SBSA 276226 or 432910 is to be welded, an in-process audit must be performed on that order and will count as one of the minimum 3, weekly. This process audit ensured that the laser weld machine was operating properly, in the appropriate configuration, which provided confidence that welds performed meet the requirements stated in drawings. The NRC inspection team asked ASCO personnel to provide the results of the weekly in-process audits. ASCO personnel stated that the last time an in-process audit was performed was in November 2023. The NRC

inspection team identified this issue as example one of Nonconformance 99901054/2024-201-02 for ASCO's failure to perform in-process audits. ASCO initiated ICAR No. I-050924-06 to address this issue.

ASCO's MP No. MP-AK-202, "Procedure for Describing the Methods Used to Check the Quality of the Laser Welded Joint on Nuclear valve SBSA 276226/432910," Revision C, dated September 6, 2017, required ASCO to measure the welded joints to ensure it met the dimensional requirements from the engineering specifications. In addition, MP-AK-202 also required ASCO to perform: (1) a strength test to ensure the welded joints can withstand the required axial load; and (2) a leakage test to ensure the welded joints do not exceed the maximum allowable leakage. The NRC inspection team asked ASCO personnel to provide the documented results of the dimensional measurements as well as the results for the axial load and leakage testing. ASCO personnel stated that the last time it manufactured an SBSA 276226 was in 2021, and for SBSA 432910, it had not performed the required dimensional measurement and axial load and leakage testing. ASCO should verify how many SBSA 276226 or 432910 were used in nuclear orders during which required testing was not performed as part of the extent of condition evaluation. The NRC inspection team identified this issue as example two of Nonconformance 99901054/2024-201-02 for ASCO's failure to perform dimensional measurements and axial load and leakage tests. ASCO initiated ICAR No. I-05092024-08 to address this issue.

Minor Issue

ASCO's manufacturing procedure No. MOS 108175, "Terminal Block Assembly," Revision AA, dated February 29, 2024, required the solder wire (part No. 0189-10127) to have a chemical composition of 60% tin and 40 % lead. During the walkthrough of the soldering area, the NRC inspection team asked for the testing records to show that the solder wire had been tested to confirm the chemical composition as required by MOS 108175. ASCO stated that it had not tested the solder wire because it had a Certificate of Conformance (CoC) from the manufacturer, which provided the chemical composition. Upon further discussions with ASCO personnel, the NRC inspection team learned that the current spool of solder wire being used was procured online from a distributor via an online supplier. While ASCO had the CoC of the manufacturer, ASCO did not perform any verification of the manufacturer's traceability controls to verify the validity of the CoC.

The NRC inspection team determined this issue to be minor because ASCO used a handheld X-Ray Fluorescence analyzer and confirmed that the solder wire met the required chemical composition. ASCO initiated ICAR No. I-050924-05 to address this issue.

c. Conclusion

The NRC inspection team issued Nonconformance 99901054/2024-201-02 for ASCO's failure to implement the regulatory requirements of Criterion IX of Appendix B to 10 CFR Part 50. Nonconformance 99901054/2024-201-02 cites ASCO for failing to control and accomplish soldering and welding by qualified personnel using qualified procedures in accordance with applicable standards, specifications, criteria, and other special requirements.

3. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its measuring and test equipment (M&TE) program to verify compliance with the requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50.

ASCO's M&TE was calibrated by external laboratories listed on the commercial approved vendors list (AVL) and internally by ASCO's staff. For a sample of M&TE, the NRC inspection team verified that the M&TE had the appropriate calibration stickers and current calibration dates, including the calibration due date. The NRC inspection team also verified that the M&TE had been calibrated, adjusted, and maintained at prescribed intervals prior to use. The calibration records reviewed by the NRC inspection team indicated the as-found or as-left conditions, accuracy required, calibration results, calibration dates, and the due date for recalibration. The NRC inspection team verified that ASCO's procedures include guidance for when M&TE equipment is found to be out of calibration. The NRC inspection team performed a walk-down of ASCO's manufacturing floor to observe that M&TE were labeled, handled, and stored in a manner that indicated the calibration status of the instrument and ensured its traceability to calibration test data. The NRC inspection team observed calibration activities associated with a pressure gage and indicator and confirmed that the calibration was performed in accordance with ASCO's procedures.

The NRC inspection team also discussed the M&TE program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

ASCO's MP No. MP-AK-203, "Nuclear SBSA 276226/432910 Axial Load Test," Revision D, dated August 29, 2018, established the method to test the SBSA to ensure it can withstand the axial load force as specified in the procedure. During a walkthrough of the valve laboratory where ASCO measured the strength of the weld using a hand-operated hydraulic press, the NRC inspection team noted that the load cell used to measure the axial load force did not have a calibration sticker to show that it was adequately controlled and calibrated under ASCO's M&TE program. During discussions with ASCO's staff, the NRC inspection team identified that the load cell had never been controlled or calibrated under ASCO's M&TE program even though it had been used to determine if the valves could withstand the required axial load force as specified in procedure.

The NRC inspection team identified this issue as example one of Nonconformance 99901054/2024-201-03 for ASCO's failure to adequately control and calibrate the load cell to maintain it accuracy within necessary limits. ASCO initiated ICAR No. I-05092024-08 to address this issue.

Section 7.0, "Acceptance Testing," of ASCO's procedure No. 9999-30312, "Soft Soldering and Workmanship Standards," Revision A, dated March 30, 2006, required the mechanical joint on solder cup terminals to withstand a pull force of 8 pounds. During a

walkthrough of the soldering area, the NRC inspection team noted that there was a weight that had “8 pounds” written on it. The NRC inspection team asked for documented objective evidence confirming the pull tests weight actually weighed eight pounds. During discussions with ASCO staff, the NRC inspection team learned that ASCO did not verify the weight used for the eight pound pull test.

The NRC inspection team identified this issue as example two of Nonconformance 99901054/2024-201-03 for ASCO’s failure to adequately control the weight used to verify the pull force of the mechanical joints of the solder cup terminals. ASCO initiated ICAR No. I-05092024-08 to address this issue.

c. Conclusion

The NRC inspection team issued Nonconformance 99901054/2024-201-03 in association with ASCO’s failure to implement the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Nonconformance 99901054/2024-201-03 cites ASCO for failing to control measuring and test equipment to ensure that tools, gages, instruments, and other measuring and testing devices used in activities quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

4. Design Control

a. Inspection Scope

The NRC inspection team reviewed ASCO’s policies and implementing procedures that govern the implementation of its design control program to verify compliance with the regulatory requirements of Criterion III, “Design Control,” of Appendix B to 10 CFR Part 50. ASCO is the original equipment manufacturer (OEM) of the NP and NS series solenoid valves, temperature and pressure switches, and NH 90/91 series hydramotors. As the OEM, ASCO confirmed that there have not been any significant design changes to these components.

The NRC inspection team reviewed a sample of design documentation (e.g., purchase orders (POs), engineering reports, design drawings). The NRC inspection team confirmed that the design requirements per the customers’ POs were adequately translated into the design drawings and design specifications, as applicable. The NRC inspection team confirmed that the design documentation included the applicable technical and regulatory requirements as required by customer specifications and ASCO’s procedures. The NRC inspection team also reviewed a sample of environmental qualification reports and verified that testing was performed in accordance with the relevant technical requirements and specifications (e.g., Institute of Electrical and Electronics Engineers, etc.), as applicable.

ASCO controlled design changes through the issuance of Engineering Change Notices (ECNs). ECNs are required for making changes to material, drawings, procedures, specifications, etc. The NRC inspection team reviewed a sample of ECNs and confirmed that they did not invalidate the original qualification of the components. In addition, the design changes are independently reviewed and approved subsequently approved by ASCO’s Engineering Manager. Furthermore, the design changes were subject to control measures commensurate with those applied to the original design. The NRC

inspection team confirmed that the ECN process was conducted in accordance with ASCO's implementing procedures, and the results of the design reviews were adequately documented.

The NRC inspection team verified that ASCO's design control process: (1) adequately translated technical and quality requirements into design documents and drawings; (2) independent verifications and checks were integrated into the process and were being performed, and (3) engineering changes were being adequately controlled and implemented in accordance with ASCO's procedures.

The NRC inspection team also discussed the design control program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its design control program in accordance with the regulatory requirements of Criterion III of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is implementing its policies and procedures associated with the design control program. No findings of significance were identified.

5. Commercial-Grade Dedication

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its commercial-grade dedication (CGD) program to verify compliance with the regulatory requirements of Criterion III and Criterion VII of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed a sample of documents associated with the CGD of the following items: (1) 1.5 inch O-ring, (2) stainless steel bracket, (3) electrical coil, and (4) solenoid. Within these CGD documents, the NRC inspection team reviewed: (1) POs; (2) technical evaluations; (3) checklists; (4) inspection and test reports; and (5) CoCs. ASCO utilized special tests and inspections (Method 1) as the method for verifying the critical characteristics met the acceptance criteria. The NRC inspection team evaluated the criteria for the identification of item functions, credible failure mechanisms and modes, selection of critical characteristics and acceptance criteria, identification of verification methods, and justification of the sampling methodologies, as applicable, to verify the effective implementation of ASCO's CGD process.
The NRC inspection team also reviewed ASCO's measures for using the International Laboratory Accreditation Cooperation accreditation process in lieu of performing commercial-grade surveys for the procurement of calibration and testing services as part of the commercial-grade dedication process. ASCO implements this process as described in the Nuclear Energy Institute document No. 14-05A, "Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of

Laboratory Calibration and Test Services," Revision 1, dated September 2020, which was recognized for use by the NRC in a safety evaluation (SE) dated November 23, 2020 (Agencywide Documents Access Management System Accession (ADAMS) No. ML20322A019).

The NRC inspection team also discussed the CGD program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its CGD program in accordance with the regulatory requirements of Criterion III and Criterion VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is implementing its policies and procedures associated with the CGD program. No findings of significance were identified.

6. Procurement Document Control and Supplier Oversight

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its procurement document control and supplier oversight programs to verify compliance with the regulatory requirements of Criterion IV, "Procurement Document Control," and Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of POs, ASCO's AVL, supplier audit reports, and annual evaluations.

For the review of the sample of POs, the NRC inspection team verified the POs included, as applicable: (1) the scope of work; (2) right of access to the suppliers' facilities; (3) extension of contractual requirements to sub-suppliers; (4) and the applicable technical, regulatory, and quality requirements.

The NRC inspection team also reviewed a sample of audit reports and verified that the audits reports included, as applicable: (1) an audit plan; (2) any findings identified and the associated corrective actions; (3) adequate documented objective evidence of compliance with the applicable requirements; and (4) a documented review by ASCO's responsible management. For the review of the annual evaluations, the NRC inspection team confirmed they included the information required by ASCO's policies and procedures. In addition, the NRC inspection team also verified that the audits were performed in accordance with the established frequency and by qualified auditors. Furthermore, the NRC inspection team reviewed the training and qualification records of lead auditors and auditors and confirmed that auditing personnel had completed all the required training and had maintained the applicable qualification and certification in accordance with ASCO's policies and procedures.

The NRC inspection team observed the receipt inspection of eight hex head cap screws. The NRC inspection team verified that the inspection was performed in accordance with ASCO's policies and procedures, using calibrated gages, and performed by a qualified nuclear product inspector.

The NRC inspection team also discussed the procurement document control and supplier oversight programs with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its procurement document control and supplier oversight programs in accordance with the regulatory requirements of Criterion IV and Criterion VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is implementing its policies and procedures associated with the procurement document control and supplier oversight programs. No findings of significance were identified.

7. Identification and Control of Material, Parts, and Components

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its material identification and control program to verify compliance with the regulatory requirements of Criterion VIII, "Identification and Control of Materials, Parts, and Components," of Appendix B to 10 CFR Part 50.

The NRC inspection team performed a walk-down of ASCO's facility and verified that items (e.g., material, parts, components) were adequately identified, as applicable. Items used for the construction of safety-related solenoid valves, temperature and pressure switches, and hydramotors are identified by ASCO's part number and a nuclear assembly work order number, all traceable to the POs. The NRC inspection team noted that these numbers are included in all of the documentation associated with the items. ASCO uses an electronic tracking system in conjunction with bar codes to maintain the traceability of items throughout the manufacturing process.

The NRC inspection team discussed the material identification and control program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its material identification and control program in accordance with the regulatory requirements of Criterion VIII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is adequately implementing its policies and procedures associated with the material identification and control program. No findings of significance were identified.

8. Test Control

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its test control program to verify compliance with the requirements of Criterion XI, "Test Control," of Appendix B to 10 CFR Part 50.

The NRC inspection team observed the complete assembly, testing, and final inspection activities associated with a safety-related solenoid valve (3-way, 120/60 VAC – Manufacturer part number – NPEF8300142EG). Specifically, the NRC inspection team observed the coil tests, flow tests, leakage tests (external and seat leakage) performed on these valves. The NRC inspection team verified that the work order identified the assembly and test procedures to be followed and that these procedures identified the testing required, pre-requisites, acceptance criteria, and objective evidence of proper review and acceptance. The NRC inspection team witnessed ASCO's processes for preparing the testing samples, setting up testing equipment and performing the required tests and recording the test results. The NRC inspection team confirmed that the tests were performed using properly calibrated M&TE. The NRC inspection team also reviewed the CoCs associated with these two valves which certified that tests have been completed in accordance with the PO, work order, and referenced drawings.

For a sample of test records reviewed, the NRC inspection team also confirmed that the following testing elements were satisfied, verified, and recorded, as appropriate: (1) test parameters and initial conditions, (2) test acceptance criteria, (3) test prerequisites, (4) test instrument range, accuracy, and uncertainty appropriate for the test; (5) current calibration, and (6) any deviations documented and evaluated. The NRC inspection team also reviewed the test records for a completed hydramotor actuator and confirmed that all the test requirements had been met.

The NRC inspection team discussed the test control program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its test control program in accordance with the regulatory requirements of Criterion XI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is adequately implementing its policies and procedures associated with the test control program. No findings of significance were identified.

9. Nonconforming Material, Parts, or Components and Corrective Action

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its nonconforming materials, parts, or components and corrective action programs to verify compliance with the requirements of Criterion XV, "Nonconforming Materials, Parts, or Components," and Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50.

The NRC inspection team verified that ASCO's processes and procedures provide for the identification, documentation, segregation, evaluation, and disposition of nonconforming items. Nonconformances could be dispositioned as "Scrap," "Rework," "Return to Vendor (RTV)," or "Use-As-Is."

The NRC inspection team reviewed a sample of Nonconformance Reports (NCRs) and verified that ASCO: (1) dispositioned the NCRs in accordance with the applicable procedures; (2) documented an appropriate technical justification for the selected disposition; and (3) took adequate corrective action regarding the nonconforming items, as applicable.

The NRC inspection team also reviewed a sample of ICARs and verified that the ICARs contained, as applicable: (1) adequate documentation and description of conditions adverse to quality; (2) an appropriate analysis of the cause of these conditions and the corrective actions taken to prevent recurrence; (3) direction for review and approval by the responsible authority; (4) a description of the current status of the corrective actions; and (5) the actions taken to verify timely and effective implementation of the corrective actions.

The NRC inspection team discussed the nonconforming materials, parts or components and corrective action programs with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its nonconforming materials, parts, or components and corrective action programs in accordance with the regulatory requirements of Criterion XV and Criterion XVI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is implementing its policies and procedures associated with its nonconforming materials, parts, or components and corrective action programs. No findings of significance were identified.

10. 10 CFR Part 21 Program

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern the implementation of its 10 CFR Part 21, "Reporting of Defects and Noncompliance," program to verify compliance with the regulatory requirements. The NRC inspection team evaluated the posting requirements of 10 CFR 21.6 and 10 CFR 21.31, "Procurement Documents," respectively. The NRC inspection team verified that ASCO's nonconformance and corrective action procedures provide a link to its 10 CFR Part 21 program. In addition, the NRC inspection team reviewed a sample of ASCO's nonconformance and corrective action reports to verify that ASCO adequately considered issues for evaluation under their 10 CFR Part 21 program.

The NRC inspection team also discussed the 10 CFR Part 21 program with ASCO's management and technical staff. The attachment to this inspection report lists the documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its 10 CFR Part 21 program in accordance with the regulatory requirements of 10 CFR Part 21. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is implementing its policies and procedures associated with the 10 CFR Part 21 program. No findings of significance were identified.

11. Internal Audits

a. Inspection Scope

The NRC inspection team reviewed ASCO's policies and implementing procedures that govern its internal audits program to verify compliance with the requirements of Criterion XVIII, "Audits," of Appendix B to 10 CFR Part 50. The NRC inspection team reviewed a sample of ASCO's internal audit reports, and corrective actions generated during internal audits.

The NRC inspection team verified that ASCO's procedures described the scope and purpose of audits to be performed, the frequency, audit criteria, and corrective actions when required. For the sample of internal audits reviewed, the NRC inspection team verified that the audit reports included: (1) audit results; (2) adequately documented objective evidence with the applicable requirements; and (3) a review by ASCO's responsible management. The NRC inspection team verified that the internal audits were performed by qualified auditors who were not auditing their own work and that the internal audits were performed using the appropriate checklists. The NRC inspection team also verified that ASCO adequately initiated and corrected any findings identified during the internal audits.

The NRC inspection team discussed the internal audits program with ASCO's management and technical staff. The attachment to this inspection report lists the

documents reviewed and personnel interviewed by the NRC inspection team.

b. Observations and Findings

No findings of significance were identified.

c. Conclusion

The NRC inspection team concluded that ASCO is implementing its internal audits program in accordance with the regulatory requirements of Criterion XVIII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the NRC inspection team also determined that ASCO is adequately implementing its policies and procedures associated with the internal audit program. No findings of significance were identified.

12. Entrance and Exit Meetings

On May 6, 2024, the NRC inspection team discussed the scope of the inspection during an entrance meeting with Mr. Kevin Falcon, Quality Engineering Manager, and other members of ASCO's management and technical staff. On May 10, 2024, the NRC inspection team presented the inspection results and observations during an exit meeting to Mr. Falcon and other members of ASCO's management and technical staff. The attachment to this report lists the attendees of the entrance and exit meetings, as well as those individuals whom the NRC inspection team interviewed.

ATTACHMENT

1. ENTRANCE/EXIT MEETING ATTENDEES

Name	Title	Affiliation	Entrance	Exit	Interviewed
Kevin Falcon	Quality Engineering Manager	ASCO Company, LLC (ASCO)	X	X	X
Robert Arnone	Quality Supervisor	ASCO	X	X	X
Kevin Arthur	Senior Quality Engineer	ASCO	X	X	X
James R. Usry	Quality Engineer	ASCO	X	X	
Frank Ferrese	Director Engineering	ASCO		X	
James E. Bryant	Quality Engineer	ASCO	X	X	
Bryan Causey	Quality Engineer	ASCO	X	X	
Todd Boggs	Valve Assembly Manager	ASCO	X	X	
Nick Ingles	Senior Product Engineer	ASCO	X	X	
Paul Cetrello*	Technical Sales	ASCO	X	X	
Angela McKey	Human Resources Manager	ASCO	X		
David Coley	Employee Health and Safety Manager	ASCO	X	X	
Chris Green	Materials Manager	ASCO	X	X	
David DeWitte	Quality Engineer & Calibration Supervisor	ASCO	X	X	X
Susan Nettle	Inspector	ASCO			X
Didi Causey	Valve Assembler	ASCO			X
Cindy Daniel	Calibration Technician	ASCO			X

Name	Title	Affiliation	Entrance	Exit	Interviewed
Terri Nettle	Calibration Technician	ASCO			X
Nicholas Ingles	Senior Product Engineer	ASCO	X	X	X
Estrella Guillen	Assembler/Tester	ASCO			X
Terrell Johns	Assembler	ASCO			X
Terri Nemeth	Supervisor	ASCO			X
Steven Ray	Laboratory Technician	ASCO			X
Andrew Zamiela	Engineering Group Leader	ASCO			X
Sandy Johnson	Lead	ASCO			X
Nancy Allen	Quality Assurance Inspector	ASCO			X
Janice Howard	Receipt Inspector	ASCO			X
Michael Fitzgerald	Inspection Team Leader (Training)	Nuclear Regulatory Commission (NRC)	X	X	
Yamir Diaz-Castillo	Inspection Team Leader	NRC	X*	X	
Frankie Vega	Inspector	NRC	X	X	
Yiu Law*	Inspector	NRC	X	X	
Kerri Kavanagh*	Branch Chief	NRC	X	X	

*Participated remotely.

2. INSPECTION PROCEDURES USED

Inspection Procedure (IP) 36100, “Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance,” dated February 10, 2023.

IP 43002, “Routine Inspections of Nuclear Vendors,” dated February 10, 2023.

IP 43004, “Inspection of Commercial-Grade Dedication Programs,” dated February 10, 2023.

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Type	Description
99901054/2024-201-01	OPENED	NON	Criterion II
99901054/2024-201-02	OPENED	NON	Criterion IX
99901054/2024-201-03	OPENED	NON	Criterion XII

4. DOCUMENTS REVIEWED

Policies and Procedures

Quality System Manual, Revision U, dated November 30, 2023

Quality Control Procedure (QC) QC-ER-168, “Calibration and Maintenance of Instrumentation,” Revision S, dated May 2019

QC-ER-217, “Measurement and Test Equipment (M&TE) Access System Procedure (Electronic),” Revision H, dated January 3, 2023

QC-ER-003, “Control and Maintenance of Calibrated instruments and Quality Control Stamps,” Revision AM, dated April 15, 2024

QC-ER-084, “Conducting Internal Quality Audits,” Revision BV, dated April 27, 2022

QC-ER-142, “Lead Auditor Qualification”, Revision K, dated October 11, 2022

Assembly Plan (AP) AP-NP-228973 for NP & NS 8300 (P37) Catalog Valves per 228973 & 278888, dated July 17, 2011

AP-1-024 “General Engineering for Cleaning Valves (or Components),” Revision K, dated February 24, 1999

AP-1-026 “General Instruction for Assembly and Testing of Products using Ethylene Propylene Elastomer Parts in Contact with Medium,” Revision AB, dated January 1998

Test Procedure (TP) TP-1-035, “Testing Coils for Nuclear Valves & Kits,” Revision BB, dated September 12, 2023

TP-3-046, “NP8300 and NS8300,” Revision AF, dated October 31, 2018

AP-NH90-011, “Assembly Procedure for AH/NH95 Actuator Frame per NH91-96VAR,” Revision F, dated April 14, 2016

Manufacturing Procedure (MP) No. MP-G-089, “Disk stroke setting for 8300 Series Valves,” dated March 26, 2015

QC-CP-26, “Calibration of Pressure Gages,” Revision C, dated July 30, 2019

QC-CP-19, “Calibration of Indicators,” Revision C, dated May 3, 1993

QC-ER-217, “Measurement and Test Equipment (M&TE) Access System Procedure,” Revision H, dated January 3, 2023

QC-ER-003 “Control and Maintenance of Calibrated Instruments and Quality Control Stamps,” Revision AM, dated April 15, 2024

QC-ER-80, “Training and Qualification of Q.A. Personnel,” Revision E, dated April 14, 1989

Engineering Department Procedure (EDP) - 001, “Engineering Change Notice (ECN),” Revision AO, dated December 13, 2023

EDP-013, “Request for Engineering Investigation (E.I.) or Change,” Revision AG, dated November 15, 2019

EDP-020, “Engineering Evaluation of Materials and Rework Authorization,” Revision P, dated June 4, 2018

EDP-111, “Qualification of Products for Safety-Related Nuclear Power Plant Applications,” Revision P, dated June 4, 2018

EDP-129, “Reviewing Documents for Impact on the Performance of Nuclear Products,” Revision PA, dated March 20, 2024

EDP-NPD2.5-001, “New Product Development Process for Platform Products,” Revision C, dated February 26, 2013

Manufacturing Procedure (MP) No. MP-AK-139, “Trumpf Laser Welder Operation, Program, Documentation, and Process Control,” Revision WB, dated August 9, 2023

MP-AK-146, “Weld Inspection Instruction for Laser Welded SBSA’s,” Revision E, dated August 13, 2014

MP-AK-202, “Procedure for Describing the Methods Used to Check the Quality of the Laser Welded Joint on Nuclear SBSA 276226/432910,” Revision C, dated September 6, 2017

MP-AK-203, “Nuclear SBSA 276226/432910 Axial Load Test,” Revision D, dated August 29, 2017

MP-AK-205, “Procedure for In-Process Audit of the Laser Welding Process,” Revision C, dated September 9, 2017

MP-G-091, “Receipt, Marking, and Stocking of Material,” Revision September 9, 2008

MOS 108175, “Terminal Block Assembly,” Revision AA, dated February 2, 2024

MP-AK-010, “Distribution of Engineering Change Notice,” Revision F, dated August 23, 2012

MP-I-026, “Sampling Plan for Product Acceptance,” Revision AB, dated November 28, 2018

MP-I-046, “Verification of Valve Contracts Requirements by Quality Assurance,” Revision P, dated June 29, 2013

MP-I-116, “Inspection of All Products (Nuclear),” Revision D, dated January 5, 2015

MP-PKV-011, “Packaging, Packing, and Marking of Products per ANSI/ASME 45.2.2,” Revision R, dated May 2011

MP-G-042, “Coding of Components and Raw Materials Requiring a Certified Materials Test Report of Chemical Analysis and Mechanical Tests,” Revision AD, dated September 12, 2014

MP-G-055, “Fluorocarbon, Polyurethane, and Ethylene Propylene Used Adequate Shelf Life,” Revision P, dated March 3, 2005

MP-PKV-011, “Packaging, Packing, and Marking of Products Per ANSI/ASME N45.2.2,” Revision R

Procedure No. 9999-30312, “Soft Soldering and Workmanship Standards,” Revision A, dated March 30, 2006

AP-AT-2-03, “Lead Cutting in GC Area,” dated October 2007

QC-ER-080, “Training and Qualification of Q.A Personnel,” Revision E, dated April 4, 1989

QC-ER-126, “Instructions for Completing & Issuing Certifications for Nuclear Actuators, & Valves, Pressure and Temperature Switches,” Revision N, dated June 16, 2016

MP-I-011, “Rework and Scrap Control,” Revision Q, dated May 8, 2015

MP-I-081, “Nuclear Products – Procedure for Reporting Defects, Deviations, Noncompliance or Failure to Comply (Safety Related 10CFR – Part 21)," Revision Y, dated October 25, 2022

MP-I-116, “Inspection of All Products (Nuclear),” Revision D, dated January 5, 2015

MP-I-128, “Procedure for Handling Return of Nuclear Product,” Revision C, dated September 5, 2012

MP-I-129, “Procedure for Handling Valve Returns,” Revision F, dated July 1, 2022

MP-PKV-011, “Packaging, Packing, and Marking of Products per ANSI/ASME N45.2.2,” Revision R

MP-AK-358, “T-8300-003 Disc Cutting Machine,” Revision AB, dated January 15, 2024

QC-ER-024, “Receiving Inspection,” Revision W, dated December 8, 2022

QC-ER-025, “Control & Maintenance of Quality Assurance Manual,” Revision L, dated August 1, 2012

QC-ER-079, “Procedure for Reporting and Executing Internal Corrective & Preventive Actions for Non-Conformances (I-CARS),” Revision S, dated January 9, 2021

QC-ER-081, “Quarantine Non-Conformance Parts from Assembly and Obrain Corrective Action,” Revision M, dated August 31, 2020

Purchasing Procedure (PUR) PUR-001, “Supplier Evaluation and Audits,” Revision B, dated March 19, 2013

PUR-002, “Adding Suppliers/Sub-Contractors,” Revision B, dated March 19, 2013

PUR-003, “Approved Suppliers,” Revision C, dated March 19, 2013

PUR-005, “Issuing Purchase Orders,” Revision B, dated March 19, 2013

Design and Commercial-Grade Dedication Records

Certificate of Analysis/Conformance for SN60Pb40 44 33% (solder), Lot No. 02207973, Manufacturing date: November 1, 2023

Certificate of Compliance for ASCO Work Order No. A37093969, ASCO Part No. 324028, dated March 22, 2024

Engineering Change Notice Nos. 314242, 328345, 329523, 336229, 336961, 408389, 410184, and 410843

Engineering Report (ER) No. 432, “Replacement for Nicotef coated part in NP8300 series valves,” Revision AA, dated April 20, 2021

ER No. R3-EQ-74, “Report on Use of Commercial Grade PVC Insulated Coppr Wire Used in NH91/94 Moel B & B1 Hydramotor Actuators,” dated January 16, 2012 (no revision provided)

ER No. R3-EQ-30, “NH90 Series Hydramotor Actuator Failure Modes & Effect Analysis Including Listing of Commercial Grade Components,” Revision 3, dated May 2, 2008

Drawing No. 200152, “Plunged, M12, Reverse Acting Solenoid,” Revision AK, dated December 21, 2022

Drawing No. 432910, “SBSA MXX AC & DC Construction Welded Nuclear Seismic – High Shock Clip Construction,” Revision B, dated July 2, 2012

Drawing No. 276226, “SBSA MXX 3 Way AC Laser Welded Construction,” Revision J, dated December 2013

Drawing No. 0189 – 1012T, “Solder,” Revision A, dated November 2007

Drawing No. 101630, “Copper Wire (Lead),” Revision FA, dated April 24, 2024

Nuclear Engineering Change Request Compliance Checklist for Part Nos. 182112, 188115, 188123, 190478, 190608, Aluminum casting parts for nuclear temperature/pressure switches, ECN No. 408389

Nuclear Qualification Report No. RDE 730.1.140, “NH90 Series Hydramotor Actuators,” dated April 24, 1984

ASCO Qualification Test Report No. AQS-21678/TR, “Qualification Tests of Solenoid Valves by Environmental Exposure to Elevated Temperature, Radiation, Wear Aging, Seismic Simulation, Vibration Endurance, Accident Radiation and Loss-of-Coolant (LOCA) Simulation,” Revision B, dated October 5, 2015

ASCO Qualification Test Report No. AQR-10183, “Report on Qualification Tests of ASCO Tri-Point Pressure Switches for Safety-Related Non-Containment Applications in Nuclear Power Generating Stations,” Revision 2, dated October 7, 2015

ASCO Qualification Test Report No. AQR-020184, “Reports on Qualification Tests of ASCO Tri-Point Temperature Switches for Safety-Related Non-Containment Applications in Nuclear Power Generating Stations,” Revision 2, dated October 7, 2015

Test Report No. AQR-21691, “Qualification Tests of Solenoid Valves by Environmental Exposure to Elevated Temperature, Radiation, Wear Aging, Seismic Simulation, Vibration Endurance, Accident Radiation and Loss-of-Coolant Accident (LOCA) Simulation,” Revision 0

Assembly Order for Work Order No. 36475157, NTQ8316G003 27253 250/DCD Valve/Solenoid, Revision T

Assembly Order for Work Order No. 37093969, Kit, Terminal Block Assembly & NH 90 Series Plug/Socket, Revision 0 (no date provided)

Assembly Order for Work Order No. 32215703, solenoid valve, Revision K

Assembly Order for Work Order No. 37039432, solenoid valve, Revision A

Assembly Order for Work Order No. 36917814, solenoid valve, Revision AB

Assembly Order for Work Order No. 36997335, solenoid valve, Revision K

Assembly Order for Work Order No. 36905144, solenoid valve, Revision C

<u>Calibration and Test Records</u>

Nuclear Valve/Coil Test Log for NPEF8300142EF (PO No. 1024008970), dated May 7, 2024

Inspection and Performance Test Certification for Work Order No. A37046118, dated April 15, 2024

Certificate of Calibration for 0-60 PSIG, Pressure Gauge (PG-1), dated May 8, 2024

Certificate of Calibration for gage ID No. MM-64, Handheld Multimeter, calibrated on March 18, 2024

Certificate of Calibration for .050” Indicator (DI-10496-46), dated May 8, 2024

Certificate of Calibration No. 411109-1489539 Revision 1, dated March 15, 2024

Certificate of Calibration No. 411109-1489540 Revision1, dated March 15, 2024

Certificate of Calibration No. EVL956276, dated March 22, 2024

Certificate of Calibration No. 411109-1489537 Revision 1, dated March 16, 2024

Certificate of Calibration No. 02062024-000025, dated February 6, 2024

Certificate of Calibration No. 02222024-000002, dated February 22, 2024

Certificate of Calibration No. 04122024-000024, dated April 12, 2024

Certificate of Calibration No. 022322024-000021, dated September 7, 2023

Certificate of Calibration No. 011522024-000020, dated January 15, 2024

Work orders (WOs), Purchase orders (POs) and Certificates of Compliance (COCs)

WO No. 37687030, dated April 18, 2024

WO No. 37046118, dated March 26, 2024

PO No. 1024008970, dated February 8, 2024

PO No. 10010601016233, dated March 8, 2024

PO No. 10010601016244, dated March 8, 2024

Certificate of Compliance for NPEF8300142EG, dated May 7, 2024

Certificate of Compliance for PO No. 1022050636, dated April 19, 2024

Supplier Oversight Records and Internal Audits

Audit Report No. 11092023-01, “TopWorx Supplier Audit/Survey,” dated January 15, 2024

Audit Report No. 12062022-01, “TopWorx Supplier Audit/Survey,” dated January 19, 2023

PO No. 4780784409 for a Class 1E ASCO Solenoid Valve, 250VDC, Revision 0, dated January 15, 2024

PO No. 4780784410 for a Class 1E ASCO Solenoid Valve, 250VDC, Revision 0, dated January 5, 2024

PO No. SNA10295954 for a solenoid valve, Revision 2, dated January 13, 2023

PO No. 78914 for a solenoid valve, Revision 0, dated November 2, 2023

PO No. 4780762847 for a solenoid valve, Revision 1, dated December 14, 2023

PO No. 1023058836 for a solenoid valve, Revision 0 dated December 18, 2023

PO No. 300435 for a solenoid valve, Revision 1, dated January 26, 2024

PO No. 158727982 for five solenoid valves, dated July 28, 2022

Nonconforming Material Reports (NCMR)

000486870, 000487602, 000488721, 000489233, 000490202, 000491783, 000493509, 000493708, 000493911, 000495934, 000496430, 000497125, 000497679, 000497981, 000498732, 000498891, 000499475, 000500046, 000500081

Internal Corrective/Preventative Action (I-CAR) Reports

I-011023-01, I-011923-01, I-011923-02, I-020623-01, I-022223, I-031323-01, I-032123-01, I-041223-01, I-060823, I-091423-01, I-120123-01, I-050123-01, I-050123-02, I-050123-03, I-100623-01, I-100623-02, I-100623-03, I-01232024-01, I-02062024-01, I-02052024-02, I-02162024-01, I-02162024-02, I-02162024-03, I-02162024-04, I-02162024-05, I-02162024-06, I-02282024-01, I-02282024-02, I-081321-01, I-081321-02, I-081321-03, I-081321-04, I-081321-05, I-081321-06, and I-081321-07

10 CFR Part 21 Reports

Part 21 Evaluation by Purchaser, dated February 25, 2024
Part 21 Evaluation by Supplier, dated September 2, 2022
Return Material Authorization # 86882

ICARs Opened During the NRC Inspection

I-05092024-01
I-05092024-02
I-05092024-03
I-05092024-04
I-05092024-05
I-05092024-06
I-05092024-07
I-05092024-08
I-05092024-09

Training and Qualification Records

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