



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

March 11, 2024

Tim Barefoot, President
Hanna Cylinders
8901 102nd Street,
Pleasant Prairie, WI 53158

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT
OF HANNA CYLINDERS NO. 99902119/2024-201, AND NOTICE OF
NONCONFORMANCE

Dear Mr. Barefoot:

On January 8 – 12, 2024, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Hanna Cylinders (hereafter referred to as Hanna) facility in Pleasant Prairie, WI. The purpose of this limited-scope inspection was to assess Hanna'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 Hanna's implementation of the quality activities associated with the design, fabrication, and testing of safety-related specialized alloy fabrication and assembly services 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 Hanna's overall quality assurance (QA) or 10 CFR Part 21 program.

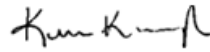
Based on the results of this inspection, the NRC inspection team found that the implementation of your QA program did not meet certain regulatory requirements imposed on you by your customers or NRC licensees. Specifically, the NRC inspection team determined that Hanna was not fully implementing its QA program in the areas of quality assurance program (indoctrination and training), control of purchased material, equipment, and services, control of measuring and test equipment, and corrective action. 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), Hanna 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. The NRC inspection team recommends that Hanna develop and implement a safety conscious work environment policy and procedure(s) in accordance with the NRC safety culture policy statement.

Please provide a written statement or explanation within 30 days 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 "Rule of Practice," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible at <http://www.nrc.gov/reading-rm/adams.html>.

CONTACT: Odunayo Ayegbusi, NRR/DRO
(301) 415-8107

Sincerely,



Signed by Kavanagh, Kerri
on 03/11/24

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

Docket No.: 99902119

EPID No.: I-2024-201-0010

Enclosure:
Inspection Report No. 99902119/2024-201
and Attachment

SUBJECT: NUCLEAR REGULATORY COMMISSION VENDOR INSPECTION REPORT OF HANNA CYLINDERS NO. 99902119/2024-201, AND NOTICE OF NONCONFORMANCE DATE: March 11, 2024

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NRR-106

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NOTICE OF NONCONFORMANCE

Hanna Cylinders
8901 102nd Street
Pleasant Prairie, WI 53158

Docket No. 99902119
Report No. 2024-201

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Hanna Cylinders (hereafter referred to as Hanna) facility in Pleasant Prairie, WI, from January 8 – 12, 2024, Hanna did not conduct certain activities in accordance with NRC requirements that were contractually imposed upon Hanna 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, “Domestic Licensing of Production and Utilization Facilities,” states in part, that “the program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.”

Section 2.5 “Indoctrination and Training,” of Hanna’s Quality Assurance Manual (QAM), Revision 2, dated July 25, 2023, “Quality Assurance Program,” states in part, that “personnel performing work determined to be within the scope of the Hanna Cylinders quality assurance program are to be given appropriate indoctrination and training prior to independently performing those activities, ... All indoctrination and training shall be documented. ... Hanna Cylinders shall maintain records of relevant authorizations, competence, training, qualifications, skills, and experience for those assigned to perform testing, inspection, and safety-related activities. These records shall be readily available and include the basis on which any authorization or competences are confirmed.”

Section 5.4.6 of Hanna’s procedure QA-1, “Training and Qualification,” revision 4, dated September 5, 2023, states “Refresher indoctrination/training may be held periodically for the purpose of reviewing the Quality Assurance Program and its revisions. Documentation of refresher training shall be retained.” Section 5.6.3 states “All training records are maintained by the Quality Manager and are to be reviewed and updated as necessary to ensure they remain accurate. Although it is not their direct responsibility the employee and their supervisor(s) should request updates/revisions when needed.”

Contrary to the above, as of January 12, 2024, Hanna failed to provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained. Specifically, Hanna failed to provide objective evidence that personnel performing activities affecting quality were adequately indoctrinated and trained. Hanna was unable to provide indoctrination and refresher training records from 2020 to present.

This issue has been identified as Nonconformance 99902119/2024-201-01.

- B. Criterion VII “Control of Purchased Material, Equipment, & Services,” of Appendix B to 10 CFR Part 50, states in part, that “measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. These measures shall include provisions, as appropriate, for source evaluation and selection,

Enclosure

objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products upon delivery. The effectiveness of the control of quality by contractors and subcontractors shall be assessed by the applicant or designee at intervals consistent with the importance, complexity, and quantity of the product or services.”

Hanna’s QAM, Section 4.4, states that “an approved supplier list comprised of sources approved by Hanna shall be maintained electronically by the QA Department.” Section 4.4.12, states “purchase orders shall not be issued to a proposed supplier not included in the approved supplier list until notification is received from Quality Manager that the supplier is qualified and approved.” Section 4.4.5, states that “approved suppliers shall be surveyed/audited onsite on a triennial basis, as a minimum and qualified by Hanna QA department using a QA survey/audit checklist by auditors assigned by the QA Manager.”

Contrary to the above, as of January 12, 2024, Hanna failed to assure that purchased materials and services conform to procurement documents through source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products upon delivery. Specifically, (1) Safety related services were procured from a supplier to perform internal audits for 2022 and 2023, however there was no objective evidence that the supplier had been audited prior to adding them to the Approved Supplier List (ASL). (2) At least three commercial suppliers were added to the ASL without Hanna performing a survey and qualification of the suppliers. (3) Hanna procured parts from at least two suppliers that were not on the ASL and Hanna did not take measures to control the items under its quality assurance program.

This issue has been identified as Nonconformance 99902119/2024-201-02.

- C. Criterion XII “Control of Measuring and Test Equipment,” of Appendix B to 10 CFR Part 50, states in part, 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 specific periods to maintain accuracy within necessary limits.”

Hanna’s QAM, Section 12.3.2 states “All measuring and test equipment shall be properly maintained, identified, and controlled.”

Section 6.6 of Hanna’s procedure QA-8, “Calibration and Control of M&TE,” Revision 10, dated October 21, 2023, states “The M&TE Calibration Log will be maintained by the Quality Technician. This log will contain a list of all devices, their ID numbers, date of last calibration, location of item, and next scheduled calibration date.” Section 6.10 states “Any device failing to meet calibration standards will be immediately removed from service.” Section 11.1 states “If equipment is found to be of nonconformance, personnel shall inform the Quality Manager and issue an M&TE NCR, QA-DOC-31.” Section 11.4 states: “If test or measuring equipment is found to be out of calibration or tolerance an extent of condition review will be performed to ensure that no safety-related materials have been measured or tested with the equipment in question.”

Contrary to the above, as of January 12, 2024, Hanna failed to assure that gages used in activities affecting quality are properly controlled. Specifically, Hanna failed to

adequately control measuring and test equipment (M&TE) and perform an extent of condition review for M&TE that was found to be out of calibration or tolerance, as described by the following examples:

- Two ring gages (TR-309 & 340) were found to be out-of-tolerance in June 2023, however, Hanna did not perform an extent of condition review to ensure that these gages were not used to measure or test safety-related material. The NRC inspection team identified that TR-340 was used for a safety-related job that Hanna shipped in July 2022.
- One vernier caliper (VNR-76) could not be found. No extent of condition review was performed.
- Two plug gauges (PG713 & PG714) were not being controlled on the M&TE Log.
- One vernier caliper (VNR-190) was past its calibration due date and in a segregation area on the floor but not tagged.

This issue has been identified as Nonconformance 99902119/2024-201-03.

- D. Criterion XVI "Corrective Action," of Appendix B to 10 CFR Part 50 states, in part, that "measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

Section 5.5 of Hanna's procedure QA-18, "Corrective Action Procedure", Revision 3, dated October 17, 2023, states that "CARs are to be completed six months after the date initiated. If additional time is required, a one-month extension may be granted but must be documented with written approval by the engineering manager." Section 5.6 states that "following the resolution of the CAR, a 30-day follow-up may be scheduled to check and ensure that the corrective action is being performed and/or is being shown to be effective."

Contrary to the above, as of January 12, 2024, Hanna failed to promptly identify and correct conditions adverse to quality. Specifically, Corrective Action Reports (CARs) 2023-31, 32, 33 were issued on May 25, 2023, and remained open; CAR 2023-30 was closed without completing the corrective action to develop a procedure for controlling items with a shelf-life; at least three CARs between April 2023 and August 2023 had open effectiveness reviews beyond the established 30-day follow-up period; and CARs 2023-34, 35, 36 were issued in June of 2023, subsequently closed, and had no evaluation of the effectiveness of the CARs.

This issue has been identified as Nonconformance 99902119/2024-201-04.

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 noncompliance's; and (4) the date when your corrective action 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 Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it 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 withholding of such material, 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 the 11th day of March 2024.

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

Docket No.: 99902119

Report No.: 99902119/2024-201

Vendor: Hanna Cylinders (Hanna)
Mujtaba Khan
Phone: 262-764-8262
Email: mkhan@hannacylinders.com

Nuclear Industry Activity: Hanna supplies safety-related specialized alloy fabrication and assembly services.

Inspection Dates: January 8 – 12, 2024

Vendor Location: 8901 102nd street,
Pleasant Prairie, WI 53158

Inspection Team Leader: Odunayo Ayegbusi NRR/DRO/IQVB

Inspectors: Greg Galletti NRR/DRO/IQVB
Andrea Keim NRR/DRO/IQVB
Michael Fitzgerald NRR/DRO/IQVB, Trainee

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

EXECUTIVE SUMMARY

99902119/2024-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a routine vendor inspection at the Hanna Cylinders (hereafter referred to as Hanna) facility in Pleasant Prairie, WI, to verify 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 from January 8 – 12, 2024. This was the first NRC inspection of this facility.

This technically focused inspection specifically evaluated Hanna's implementation of the quality activities associated with the design, fabrication, and commercial grade dedication (CGD) of safety-related specialized alloy fabrication and assembly services being supplied to U.S. nuclear power plants.

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

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

The NRC inspection team observed the following specific activities:

- Machining of a hydraulic cylinder piston

During this inspection, the NRC inspection team implemented Inspection Procedure (IP) 43002, "Routine Inspections of Nuclear Vendors," dated February 10, 2023, (IP) 43003, "Reactive Inspections of Nuclear Vendors," dated April 8, 2020, 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.

The results of the inspection are summarized below.

10 CFR Part 21 Program

The NRC inspection team concluded that Hanna 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 Hanna is adequately implementing its policies and procedures associated with the 10 CFR Part 21 program. No findings of significance were identified.

Quality Assurance Program

The NRC Inspection team issued Nonconformance 99902119/2024-201-01 for Hanna's failure to implement the regulatory requirements of Criterion II of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-01 cites Hanna for failing to provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

Control of Purchase of Materials, Equipment, and Services

The NRC Inspection team issued Nonconformance 99902119/2024-201-02 for Hanna's failure to implement the regulatory requirements of Criterion VII of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-02 cites Hanna for failing to assure that purchased materials and services conform to procurement documents through source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products upon delivery.

Control of Measuring Test & Equipment

The NRC inspection team issued Nonconformance 99902119/2024-201-03 for Hanna's failure to implement the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-03 cites Hanna for failing to assure that gages used in activities affecting quality were properly controlled.

Corrective Action

The NRC Inspection team issued Nonconformance 99902119/2024-201-04 for Hanna's failure to implement the regulatory requirements of Criterion XVI of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-04 cites Hanna for failing to promptly identify and correct conditions adverse to quality.

Safety Conscious Work Environment

The NRC inspection team concluded that while Hanna does not have documented policies or procedures for a SCWE or employee concerns program that meets the expectations set forth in the NRC safety culture policy statement (76 FR 34773), Hanna's staff appear to feel comfortable raising safety concerns. However, the NRC Inspection team recommends that Hanna develop and implement a SCWE policy and procedures that meets the expectations set forth in the NRC safety culture policy statement.

Other Inspection Areas

The NRC inspection team determined that Hanna established its QA programs for design control, commercial grade dedication, test control, nonconforming material, parts, or components 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 Hanna is implementing its policies and procedures associated with these programs. No findings of significance were identified in these areas.

REPORT DETAILS

1. Quality Assurance Program

a. Inspection Scope

The NRC inspection team reviewed Hanna's policies and implementing procedures that govern the implementation of its quality assurance 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 indoctrination and training of personnel performing activities affecting quality to assure that suitable proficiency is achieved and maintained.

The NRC inspection team also discussed the quality assurance program with Hanna'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 found that Hanna's QA manual and procedures do not specify the requirements for indoctrination and training, including refresher training. In addition, Hanna was unable to provide objective evidence for the indoctrination and training of its staff that perform quality related activities. Specifically, training records from 2020 to present for individuals performing activities affecting quality were not readily available.

The NRC inspection team determined this issue to be a failure to implement the regulatory requirements of Criterion II of Appendix B to 10 CFR Part 50, which requires that Hanna provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained. As a result, the NRC inspection team issued Nonconformance 99902119/2024-201-01.

Using Appendix E of Inspection Manual Chapter (IMC) 0617, the NRC inspection team determined these issues to be more than minor based on the screening process in Section E.8 of IMC 0617, because the issue is similar to the more than minor statement of Section E.9, Example 3.a. Specifically, inspection/testing was performed on safety-related components with personnel who were not qualified for the inspection/testing procedures, and there is evidence to question the quality of those safety-related components that were accepted by the inspection/testing activities. Hanna initiated CAR No. 2024-01 to document this issue. Hanna documented all the issues identified during the NRC inspection in CAR No. 2024-01.

c. Conclusion

The NRC Inspection team issued Nonconformance 99902119/2024-201-01 for Hanna's failure to implement the regulatory requirements of Criterion II of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-01 cites Hanna for failing to provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

2. Procurement Document Control and Oversight of Contracted Activities

a. Inspection Scope

The NRC inspection team reviewed Hanna's policies and implementing procedures that govern the implementation of its supplier oversight program to verify compliance with the regulatory requirements of Criterion IV, "Procurement Document Control," and Criterion VII, "Control of Purchased Material, Equipment, & Services," of Appendix B to 10 CFR Part 50.

The NRC inspection team reviewed Hanna's approved supplier list (ASL), and a sample of purchase orders (POs), supplier audits/surveys, and receipt inspection records. For the sample of POs reviewed, the NRC inspection team verified that the POs included, as appropriate: scope of work, right of access to the suppliers' facilities, conditions and restrictions imposed to sub-suppliers. The NRC inspection team confirmed that the POs adequately invoked the applicable technical, regulatory, and quality requirements. In addition, the NRC inspection team verified that for the sample of receipt inspection records reviewed (e.g., receipt inspection reports, Certificates of Compliance, and Certificate of Calibration), these records were (1) reviewed by Hanna for compliance with the requirements of the POs, (2) the records were approved by qualified individuals, and (3) the records contained the applicable technical and regulatory information.

The NRC inspection team selected a sample of suppliers from the ASL to review the methodology for conducting and documenting audits to verify adequate evaluation of the suppliers' controls for meeting the applicable requirements of Appendix B to 10 CFR Part 50. For the sample of supplier audits reviewed, the NRC inspection team evaluated the following: the audit reports included an audit plan; audits were performed according to established frequency; audit reports included adequate documented objective evidence of compliance with the applicable requirements; and audit documentation was reviewed by Hanna's responsible management.

The NRC inspection team discussed the procurement document control and supplier oversight program with Hanna'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

During the review of audit reports for suppliers on the ASL, the NRC inspection team reviewed a NIAC audit report for which Hanna used to justify adding a supplier to its ASL. The NRC inspection team found that Hanna had not performed a third-party audit assessment evaluation to determine if the NIAC audit report addresses the needs of Hanna as required by Hanna's QAP 18.1, "Supplier Audits and Commercial Grade Survey." Specifically, QAP 18.1, section 5.3.2, states in part that "Hanna shall review the audit or commercial grade survey provided by NIAC to determine if it addresses the needs of Hanna." It further states that "the review and acceptance shall be documented using Form Q-29L, Third Party Audit Assessment Evaluation." Specifically, safety related services were procured from a supplier to perform internal audits at Hanna in 2022 and 2023, however there was no evidence that the auditing supplier had been audited nor a completed evaluation form that reviewed a third-party audit performed on the supplier prior to adding

them to Hanna's ASL. In addition, at least three commercial suppliers continued to be on Hanna's ASL without performing a survey and qualification of the suppliers. Parts were procured from these commercial suppliers and Hanna did not take measures to control the items under its quality assurance program.

The NRC inspection team determined this issue to be a failure to implement the regulatory requirements of Criterion VII of Appendix B to 10 CFR Part 50, which requires that Hanna assures that purchased materials and services conform to procurement documents through source evaluation and selection. As a result, the NRC inspection team issued Nonconformance 99902119/2024-201-02.

Using Appendix E of IMC 0617, the NRC inspection team determined these issues to be more than minor based on the screening process in Section E.8 of IMC 0617. Specifically, the NRC inspectors determined that if left uncorrected, the inadequate evaluation of suppliers, lack of objective evidence, and failure to control procured items under its quality assurance program, represent a failure to implement or maintain a process and quality oversight function that could render the quality of the safety related activities unacceptable or indeterminate. Hanna initiated CAR No. 2024-01 to document this issue. Hanna documented all the issues identified during the NRC inspection in CAR No. 2024-01.

c. Conclusion

The NRC Inspection team issued Nonconformance 99902119/2024-201-02 for Hanna's failure to implement the regulatory requirements of Criterion VII of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-02 cites Hanna for failing to assure that purchased materials and services conform to procurement documents through source evaluation and selection.

3. Control of Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed Hanna's policies and implementing procedures that govern the implementation of its 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.

For a sample of M&TE, the NRC inspection team reviewed M&TE on the shop floor as well as reviewed the records for selected M&TE to ensure, appropriate calibration stickers and current calibration dates, including the calibration due date. The NRC inspection team also verified that all M&TE reviewed during observed testing activities was properly calibrated, adjusted, and maintained at prescribed intervals prior to use. 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. Furthermore, the NRC inspection team also verified that the selected M&TE's were calibrated using procedures traceable to known industry standards.

The NRC inspection team reviewed Hanna's procedure to verify that when M&TE equipment is found to be out of calibration, a non-conforming report (NCR) is initiated, and an evaluation is performed to determine if the M&TE was previously used. The NRC inspection team performed a walk-down of Hanna's fabrication floor to evaluate if 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 discussed the control of M&TE with Hanna'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

During the review of NCRs, an NCR documented two ring gages (TR-309 & TR-340) were found out-of-tolerance in June 2023. Hanna's disposition was to replace the gages. In response to the NRC inspection team questions, Hanna found that gage TR-340 was used on a safety related item that it shipped to its customer in July 2022. Because Hanna did not perform an extent of condition review at the time the gages were reported to be out of tolerance, the NRC inspection team could not determine if the gage was out of tolerance when it was used on the safety related item that shipped in July 2022.

During a walkdown of Hanna's M&TE, the NRC inspection team found a vernier caliper (VNR-76) could not be located and no extent of condition had been performed, another vernier caliper (VNR-190) was found to be out of calibration and in a segregation area, however the caliper was not tagged to be out of calibration, and two plug gages (PG713 & PG714) were not being controlled on the M&TE Log.

The NRC inspection team determined that the issues were failures to implement the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50, which requires that gages used in activities affecting quality are properly controlled. As a result, the NRC inspection team issued Nonconformance 99902119/2024-201-03.

Using Appendix E of IMC 0617, the NRC inspection team determined these issues to be more than minor based on the screening process in Section E.8 of IMC 0617, because the issues are similar to the more than minor statement of Section E.9, Example 13.c. Specifically, the issues require an evaluation of out of tolerance, lost, or damaged M&TE that indicates questionable acceptability for previous inspection or test results indicating the need to re-inspect or re-test. Hanna initiated CAR No. 2024-01 to document this issue. Hanna documented all the issues identified during the NRC inspection in CAR No. 2024-01.

c. Conclusion

The NRC inspection team issued Nonconformance 99902119/2024-201-03 for Hanna's failure to implement the regulatory requirements of Criterion XII of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-03 cites Hanna for failing to assure that gages used in activities affecting quality were properly controlled.

4. Nonconforming Materials, Parts, or Components and Corrective Action

a. Inspection Scope

The NRC inspection team reviewed Hanna's policies and implementing procedures that govern the implementation of its nonconformance control 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 Hanna's processes and procedures provide for the identification, documentation, segregation, evaluation, and disposition of nonconforming items. These processes also apply the principles of rework/repair, use-as-is, scrap/salvage, return to vendor, or no defect found.

The NRC inspection team observed Hanna's assembly floor operations and verified that nonconforming materials, parts, or components were properly identified, marked, and segregated, when practical, to ensure that they were not reintroduced into the production processes. The NRC inspection team reviewed a sample of NCRs and defective material reports (DMRs) associated with the production of safety-related parts and confirmed that Hanna dispositioned the nonconforming materials in accordance with the applicable procedures, documented an appropriate technical justification for the various dispositions utilized, and took adequate corrective action regarding the nonconforming items to prevent recurrence, as appropriate. In addition, the NRC inspection team confirmed that the nonconformance process provides a link to the 10 CFR Part 21 program.

The NRC inspection team also reviewed a sample of CARs to verify: (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 correction actions; and (5) the actions taken to verify timely and effective implementation of the corrective actions. In addition, the NRC inspection team confirmed that the corrective action process provides a link to the 10 CFR Part 21 program.

Additionally, the NRC inspection team discussed the nonconformance and corrective action programs with Hanna'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 reviewed a sample of CARs and found that Hanna had not been adequately implementing its corrective action program. Hanna's QA-18, "Corrective Action Procedure," Section 5.5, states that "CARs are to be completed six months after the date initiated. If additional time is required, a one-month extension may be granted but must be documented with written approval by the engineering manager." Section 5.6, states that "following the resolution of the CAR, a 30-day follow-up may be scheduled to check and ensure that the corrective action is being performed and/or is being shown to be effective."

The NRC inspection team identified at least three CARs (CARs 2023-31, 32, 33) that were past the 6 months due date. Specifically, the CARs were opened to document audit findings in May 2023 and remained open during the NRC inspection with no documented extensions. The NRC inspection team found that the conditions adverse to quality documented in the CARs were significant in nature, Hanna had not extended the CAR due dates and did not implement temporary measures while it corrected the issues. CAR 2023-30 was closed without developing a procedure to control shelf-life items which was identified as a corrective action. In addition, at least twenty CARs that were closed between April 2023 and August 2023 were still under observation for the effectiveness of the corrective actions and at least three CARs (CARs 2023-34, 35, 36) opened in June 2023 and subsequently closed, had not been evaluated for the effectiveness of the CARs. The NRC inspection team noted that Hanna implemented corrective actions to evaluate the effectiveness of CARs in

response to previous deficiencies identified with its corrective action program.

The NRC inspection team determined these issues to be a failure to implement the regulatory requirements of Criterion XVI of Appendix B to 10 CFR Part 50, which requires that conditions adverse to quality are promptly identified and corrected. As a result, the NRC inspection team issued Nonconformance 99902119/2024-201-04.

Using Appendix E of IMC 0617, "Vendor and Quality Assurance Implementation Inspection Reports," the NRC inspection team determined these issues to be more than minor based on the screening process in Section E.8 of IMC 0617. Specifically, the NRC inspectors determined that the issues documented in the overdue CARs were significant and therefore if left uncorrected, it represents a failure of Hanna to implement and maintain a process that could render the quality of safety-related activities unacceptable or indeterminate. Hanna initiated CAR No. 2024-01 to document this issue. Hanna documented all the issues identified during the NRC inspection in CAR No. 2024-01.

The NRC inspection team observed that Hanna documented all the issues identified during the inspection including minor issues in one CAR (CAR No. 2024-01). This approach would make it difficult to track each issue to completion because some issues will require evaluations and multiple corrective actions that need to be tracked to completion.

c. Conclusion

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

The NRC Inspection team issued Nonconformance 99902119/2024-201-04 for Hanna's failure to implement the regulatory requirements of Criterion XVI of Appendix B to 10 CFR Part 50. Nonconformance 99902119/2024-201-04 cites Hanna for failing to promptly identify and correct conditions adverse to quality.

5. Safety Conscious Work Environment (SCWE)

a. Inspection Scope

The NRC safety culture policy statement sets forth the NRC's expectation that individuals and organizations performing regulated activities establish and maintain a positive safety culture commensurate with the safety and security significance of their activities and the nature and complexity of their organizations and functions. This policy statement applies to vendors and suppliers of safety-related components to NRC regulated facilities. One element of safety culture is SCWE. SCWE is defined as an environment in which employees are encouraged to raise safety concerns, are free to raise concerns both to their own management and to the NRC without the fear of retaliation, where concerns are promptly reviewed, given proper priority, and appropriately resolved, and timely feedback is provided to those raising concerns.

The NRC inspection team interviewed members of Hanna's staff to determine if they have processes and policies to address nuclear safety issues and processes to prevent real or perceived barriers to an individual's ability to raise concerns. The NRC inspection team requested to review any SCWE or employee concern program policies and procedures.

b. Observations and Findings

The NRC inspection team found that Hanna does not implement policies and procedure that would govern a SCWE or employee concerns program. During interviews with Hanna's personnel, the NRC inspection team identified that Hanna had experienced high turnover of its staff in recent years. The NRC inspection team was unable to fully assess the SCWE environment at Hanna due to the relatively short time of employment of many of Hanna's staff. However, based on the outcome of limited number of interviews conducted of selected individuals within Hanna's organization, the NRC inspection team determined that Hanna's staff are willing to raise nuclear safety concerns and the individual's perception of their management's responsiveness to these concerns appeared positive. Some of Hanna's staff were not aware that they could raise concerns directly to the NRC.

c. Conclusion

The NRC inspection team concluded that while Hanna does not have documented policies or procedures for a SCWE or employee concerns program that meets the expectations set forth in the NRC safety culture policy statement, Hanna's staff appear to feel comfortable raising safety concerns. However, the NRC Inspection team recommends that Hanna develop and implement a SCWE policy and procedures that meets the expectations set forth in the NRC safety culture policy statement.

6. Design Control

a. Inspection Scope

The NRC inspection team reviewed Hanna's policies and implementing procedures that govern its design control program to verify compliance with the requirements of Criterion III, "Design Control," of Appendix B to 10 CFR Part 50.

The NRC inspection team also reviewed a sample of product design packages, including, but not limited to, design information, bill of materials, design drawings, and specifications, for a sample of products including air valve assemblies and pneumatic cylinders. The NRC inspection team reviewed the work orders (job router) associated with job nos. 224998 and 227929 to confirm that the work order provided adequate control over the in-process production activities, including, parts, machining and fabrication activities, in-process test, or inspection requirements, required hold points, and any special provisions identified. The NRC inspection team reviewed documents to verify that purchase order specifications and quality requirements were adequately documented. The NRC inspection team verified that the job router clearly identified as nuclear grade, contained material testing and any special machining requirements, and identified hold points related to QA/QC inspection activities.

Additionally, the NRC inspection team discussed the design control program with Hanna'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 Hanna 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 Hanna is implementing its policies and procedures associated with the design control program. No findings of significance were identified.

7. Commercial-Grade Dedication (CGD)

a. Inspection Scope

The NRC inspection team reviewed Hanna's policies and implementing procedures that govern the implementation of its 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 instructions related to commercial grade material certification, traceability, lot/batch control, and sampling methodology implemented for CGD activities and verified that the procurement instructions contained specific requirements covering unqualified source materials, material repair, material identification, and required documentation.

In addition, the NRC inspection team reviewed a sample of dedication documentation to confirm that specific critical characteristics, acceptance criteria, and verification methods to be used for each critical item were identified and documented. The NRC inspection team also reviewed additional engineering and procurement procedures developed to support the evaluation of individual seal and fastener items used in the products. The NRC inspection team reviewed a sample of completed test and inspection documentation for dedicated piece parts to confirm the documentation was consistent with the requirements in the implementation procedures and provided objective evidence to support the conclusions made.

The NRC inspection team reviewed a sample of design information (ID files) for sub-parts and confirmed that for each subpart, the PO to the sub-supplier, incoming component checklist, design drawings, product verification sheets were included. For incoming materials, a formal incoming materials checklist was used to document testing and special inspections performed on those items. The NRC inspection team confirmed that the sample of material checklists evaluated contained adequate objective evidence, including, the measurement acceptance criteria, the measurement equipment used and its calibration status, and a record of the actual measured values for the items. The NRC inspection team reviewed a sample of product verification sheets and confirmed that the sample contained specific dedication requirements for each item including, acceptance criteria and required sample size consistent with recognized industry standards.

The NRC inspection team reviewed the in-process inspection of sub-parts for job 22638001-001 and confirmed measurement acceptance criteria, measurement equipment, and calibration status, and actual measured values were documented on in-process inspection worksheets. For items not meeting defined acceptance criteria or when alternate measurement equipment was used for specific inspections, the worksheets contained additional remarks or rationale for acceptance or rejection of those items or practices.

The NRC inspection team reviewed Certificate of Conformances (CoC) for a sample of safety-related products. The NRC inspection team confirmed that the safety related CoCs included references to use of the vendor's nuclear QAM, and applicability of Appendix B to 10 CFR Part 50, and 10 CFR Part 21. For elastomeric sub-parts, the design documents identified shelf-life limitations and confirmed that all soft seal components are identified, and both batch information and cure date are provided to the purchaser on the CoC.

The NRC inspection team also discussed the CGD program with Hanna'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 Hanna 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 determined that Hanna is implementing its policies and procedures associated with the CGD program. No findings of significance were identified.

8. Test Control

a. Inspection Scope

The NRC inspection team reviewed Hanna'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 reviewed the test documentation associated with in-process and final factory testing for a sample of components including NCFP298D - Air Valve Assembly and Control Panel, NCFP298D-MOD - Air Valve Assembly, N706-81618-000 - Special Air Cylinder Assembly, and N706-80344-1028 - Cylinder Assembly Spring Extended. The NRC inspection team verified that the assembly and final test procedures including the job operation reports, modification/final assembly instructions, and calibration and verification testing procedures adequately identified the testing required, pre-requisites, acceptance criteria, and objective evidence of proper review and acceptance. The sample also contained recorded test results input data, test equipment logs, and identification of the test technicians performing the work. The NRC inspection team performed a review the test documents to ensure that the tests were performed using properly calibrated M&TE.

The NRC inspection team discussed the test control program with Hanna'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 Hanna 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 Hanna is implementing its policies and procedures associated with the test control program. No findings of significance were identified.

9. Internal Audits

a. Inspection Scope

The NRC inspection team reviewed Hanna's policies and implementing procedures that govern the implementation of its internal audit program to verify compliance with the regulatory requirements of Criterion XVIII, "Audits," of Appendix B to 10 CFR Part 50.

The NRC inspection team selected a sample of internal audits and reviewed relevant corrective action reports for issues identified during the audits, audit plans, training, and qualification records of the auditors. The NRC inspection team reviewed these documents to verify that they contain adequate detail in accordance with Hanna's procedures and applicable requirements.

The NRC inspection team also discussed the internal audit program with Hanna'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 Hanna is implementing its internal audit 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 Hanna is adequately implementing its policies and procedures associated with the internal audit program. No findings of significance were identified.

10. 10 CFR Part 21 Program

a. Inspection Scope

The U.S. Nuclear Regulatory Commission (NRC) inspection team reviewed Hanna'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 also evaluated the 10 CFR Part 21 postings and a sample of Hanna's POs to verify compliance with the requirements of 10 CFR 21.21, "Notification of Failure to Comply or Existence of a Defect and its Evaluation," and 10 CFR 21.31, "Procurement Documents." The NRC inspection team also verified that Hanna's nonconformance and corrective action procedures provide a link to the 10 CFR Part 21 program.

The NRC inspection team also discussed the 10 CFR Part 21 program with Hanna'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 Hanna 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 Hanna is adequately implementing its policies and procedures associated with the 10 CFR Part 21 program. No findings of significance were identified.

11. Entrance and Exit Meetings

On January 8, 2024, the NRC inspection team presented the inspection scope during an entrance meeting with Mr. Kimball Bradley, Hanna's owner/chairman, and other members of Hanna's management and technical staff. On January 12, 2024, the NRC inspection team presented the inspection results to Mr. Bradley and other members of Hanna 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	Position	Affiliation	Entrance	Exit	Interviewed
Kimball Bradley	Chairman/Owner	Hanna	X	X	X
Tim Barefoot	President	Hanna	X		
Mujtaba Khan	Quality Manager	Hanna	X	X	X
Kerry Adams	Plant Manager	Hanna	X	X	
Tyler Whetstone	Production Manager	Hanna			X
Brian Musha	Engineering Manager	Hanna	X		X
Brian Day	Engineer	Hanna	X		X
Matt Brey	Accounting	Hanna			X
Pat Arber	Purchasing	Hanna			X
Aaliyah Cochran	Quality Administrator	Hanna	X		X
Connor Minkley	Production Manager	Hanna		X	X
Odunayo Ayegbusi	Inspector, Team Lead	NRC	X	X	
Greg Galletti	Inspector	NRC	X	X	
Andrea Keim	Inspector	NRC	X	X	
Michael Fitzgerald	Inspector	NRC	X	X	
Kerri Kavanagh	Branch Chief	NRC	X*	X*	

* Attended Virtually

2. INSPECTION PROCEDURES USED:

- Inspection Procedure (IP) 43002, “Routine Inspections of Nuclear Vendors,” dated February 10, 2023
- IP 43003, “Reactive Inspections of Nuclear Vendors,” dated April 8, 2020
- IP 43004, “Inspection of Commercial-Grade Dedication Programs,” dated February 10, 2023
- IP 36100, “Inspection of 10 CFR Part 21 and Programs for Reporting of Defects and Noncompliance,” dated February 10, 2023
- IP 71152, “Problem Identification and Resolution (PI&R),” dated October 31, 2023
- IP 93100, “Safety-Conscious Work Environment Issue of Concern Followup,” dated July 14, 2021

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Type	Description
99902119/2024-201-01	OPENED	Nonconformance	Criterion II
99902119/2024-201-02	OPENED	Nonconformance	Criteria IV & VII
99902119/2024-201-03	OPENED	Nonconformance	Criterion XII
99902119/2024-201-04	OPENED	Nonconformance	Criterion XVI

4. DOCUMENTS REVIEWED

Quality Assurance Procedures (QAP):

- Quality Assurance Manual, Revision 0, 2nd Issue, dated November 6, 2015
- Quality Assurance Manual, Revision 1, 2nd Issue, dated April 23, 2021
- Quality Assurance Manual, Revision 2, 2nd Issue, dated July 26, 2023
- QA-2 “Assembly/Test Personnel Qualifications”, Revision 2, dated May 5, 2023
- QA-3 “Qualification of Audit Personnel”, Revision 6, dated August 31, 2023
- QA-4, “Unqualified Source Material,” Revision 2, dated April 19, 2021
- QA-5 “Quality Assurance Audits Procedure”, Revision 7, dated November 20, 2023
- QA-6 “Receiving Inspection and Control”, Revision 2, dated June 27, 2023
- QA-7, “Identification and Traceability Procedure,” Revision 1, dated June 27, 2023
- QA-8 “Calibration and Control of M&TE”, Revision 10, dated October 21, 2023
- QA-9 “Handling, Protection, Preservation, and Storage of Materials”, Revision 1, dated September 7, 2023
- QA-10 “Packaging, Marking, & Shipping”, Revision 1, dated September 7, 2023
- QA-11 “Reporting of Defects and Noncompliance”, Revision 5, dated June 7, 2023
- QA-12 “Material Verification Procedure” Revision 2, dated October 31, 2023
- QA-14 “Certificate of Conformance Procedure” Revision 0, dated May 7, 2023
- QA-15 “Design Control” Revision 2, dated December 5, 2023
- QA-16 “Control of Records” Revision 6, dated July 10, 2023
- QA-17 “Non-Conforming Items Procedure” Revision 4, dated May 8, 2023
- QA-19 “Receiving Inspection of Plated Components” Revision 0, dated January 13, 2017
- QA-20 “Receiving Inspection of Heat Treated Components” Revision 0, dated January

- 13, 2017
- QA-21 “Receiving Inspection Non-Destructive Tested Components” Revision 0, dated January 16, 2017
- QA-22 “Receiving Inspection of Cast Impregnated Components” Revision 0, dated January 16, 2017
- QA-23 “Receiving Inspection of Hard Coat Anodized Components” Revision 0, dated January 12, 2017
- QA-24 “Receiving Inspection of Broached Components” Revision 0, dated January 12, 2017
- QA-25 “Receiving Inspection of Painted Products” Revision 0, dated January 18, 2017
- QA-26 “Receiving Inspection of Teflon Coated Components” Revision 0, dated January 12, 2017
- QA-27, “Critical Components List for Double Rod End Family of Tie Rod Cylinders, Safety Related, Nuclear Code Units,” Revision 0, dated June 5, 2017
- QA-28, “Critical Components List for Single Rod End Family of Tie Rod Cylinders, Safety Related, Nuclear Code Units,” Revision 0, dated June 5, 2017
- QA-29 “Document Control Procedure” Revision 3, dated June 30, 2023
- QA-30 “Control of Purchased Material, Equipment, & Services” Revision 1, dated May 4, 2023
- QA-31 “Supplier Requirements for the Procurement of Materials, Components, Services and Equipment” Revision 1, dated May 6, 2023
- QA-41 “Inspection Procedure” Revision 0, dated July 12, 2023
- SQR-011 “Calibration Certification for All Outsourced Calibration Services” Revision 7, dated August 11, 2023
- SQR-015 “Suppliers of Calibration Services” Revision 1, dated January 7, 2016
- ES 3207A “Engineering Material Standard – Medium Pressure Hydraulic Test Procedure” Revision 3, dated May 22, 2023
- ES3207E “Engineering Material Standard – Nitrogen Final Test Procedure” Revision 4, dated February 20, 2020
- QC-DOC-002 “Test Report” Revision 7
- HC-ENG-1 “Dedication of Commercial Grade Items and Services” Revision 6, dated November 15, 2023
- Weir Valve Procedure No. 320-20007909 “TVA Panel/Sub-Plate Testing NCFP298D & NCFP298D-MOD” Revision 2, dated July 8, 2016

Design Documents:

- Job 227959 “Cylinder Assembly Spring Extended”
- Job 226380 “Special Air Cylinder Assembly”
- Job 224998 “Control Panel and Special Air Cylinder Assembly”
- Job 214730 “Control Panel”
- Job 214730, “NCFP298D, TVA – PWR HSIV Air Cylinder Valve Arrangement,” dated June 10, 2019
- Job 224998, “NCFP298D-MOD, TVA – PWR HSIV Air Cylinder Valve Arrangement,” dated October 12, 2021
- Job 226380, “N706-81618-000/ N706-81618-001 Assembly 2076 Bores LA-2H Line (K)2.50 Rod Dia.,” dated May 2, 2022
- Job 227959, N706-80344-1028 Cylinder Assembly Spring Extend,” dated September 16, 2022

Test Control Documents:

- K22638001-02 “Engineering Test Standard or Procure Used per Drawing N706-81618-000 Rev. B” dated September 26, 2022
- K22638001-01 “Engineering Test Standard or Procure Used per Drawing N706-81618-000 Rev. B” dated August 24, 2022
- 227959-001 Final Test Report Package, dated April 11, 2023
- 221177-001 Final Test Report Package, dated January 18, 2021
- QA-DOC-028 “Calibration Receipt Inspection” for PO 230589, dated December 7, 2023
- QA-10-006 “TVA Panel/Sub-Plate Testing NCFP298D & NCFP298D-MOD” Revision 2, dated December 10, 2019

Commercial Grade Dedication Packages (CGD) and Critical Characteristics Attribute and Verification (CCAV) sheets:

- SQR-014, “Commercial Grade Dedication for Automatic Valves Hydraulic/Pneumatic,” Revision 2, dated May 2, 2014
- SQR-004, “Commercial Grade Material Certification,” Revision 1, dated March 2, 2012
- SQR-006, “Exempt – Seals, O-Rings Certification,” Revision 0, dated July 20, 2007
- SQR-010, “Mechanical Chemical Testing Exclusive Vendor Exova,” Revision 6, dated May 2, 2014
- QA-DOC-041 (HC-CGD-1), “Production Verification Sheet Appendix_,” Revision 0
- QA-DOC-0039, “Technical Evaluation for Commercial Grade Item Dedication,” Revision 0
- SQR-016, “Commercial Grade Dedication for Coils (AC and DC),” Revision 1, dated November 30, 2016

Audit/Survey:

- 2021 Internal Audit Report, dated August 20, 2021
- 2022 Internal Inspection Report, dated December 5, 2022
- 2023 Internal Inspection Report, dated December 13, 2023

Purchase Orders:

- 230637-00 Calibration Services dated November 10, 2023
- 230602-00 Calibration Services dated November 7, 2023
- 229788-00 Calibration Services dated August 12, 2023
- 228552-00 Calibration Services dated May 1, 2023
- 2045338, “Control Panel,” dated September 30, 2021
- 291692, “Air Actuator,” dated July 28, 2022
- 2038196, “Control Panel,” dated May 23, 2019
- 2046284, “Air Cylinder,” dated February 24, 2022

NIAC Audit Review/Acceptance:

- NAIC Audit Review/Acceptance of Theseus Professional Services, LLC, dated April 19, 2023
- NAIC Audit Review/Acceptance of Automatic Valve, dated April 19, 2023
- NAIC Audit Review/Acceptance of Draco Spring MFG, dated April 19, 2023
- NAIC Audit Review/Acceptance of Element Material Technologies, dated April 20, 2023

Evaluation of Approved Suppliers:

- Evaluation of Approved Supplier, dated August 30, 2022
- Evaluation of Approved Supplier, dated April 14, 2023
- Evaluation of Approved Supplier, dated April 16, 2023
- Evaluation of Approved Supplier, dated April 17, 2023
- Evaluation of Approved Supplier, dated April 17, 2023
- Evaluation of Approved Supplier, dated April 23, 2023

Measuring and Test Equipment Documents:

- TP1825 UN 5 ¼-12 UN-2B (409178)
- PG713 Plug Gages (1313426)
- M902 Starrett Micrometer 11-12" (351454)
- MS811 Thread Gage 14" (238984)
- 1676 Square Gage Blocks (328868)
- IND111 2.5" Indicator Arm (384649)
- PG714 Plug Gages (1320516)
- TW27 10-100 ft-lb Torque Wrench
- TW17 50-250 ft-lb Torque Wrench
- VNR76 Venier Calipers
- VNR190 Venier Calipers
- NPG8 300 x 5 psig
- NPG42 200 x 5 psig
- TR309 1"-16 UN-2A
- TR340 1 7/8"- 12 UN-2A

DMRs/NCRs:

- DMR-39826, 40140
- NCR-661, 662, 664, 667, 671, 675, 678

CARs and Corrective Action/Preventive Action (CAPA) Reviewed During the NRC Inspection:

- CAR s2021-13, 18, 22, 23, 27
- CARs 2022-06, 12, 16, 2023-04
- CARs 2023-10, 11,12, 13, 17, 18, 21, 24, 30, 31, 32, 33, 35, 36, 39, 41, 44

CARs Drafted as a Result of the NRC Inspection:

- CAR 2024-01

Training Records:

- Lead Auditor Qualification Package for J. Sims from vendor, dated March 25, 2021
- Lead Auditor Qualification Package for G. Fischer from contracted vendor, dated October 14, 2022
- Lead Auditor Qualification Package for M. Worby dated October 30, 2023

Miscellaneous:

- Shop Order 230922PO1, "Piston, 28" Bore"