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

November 3, 2023

Mr. Cornell Turrentine
Quality Manager
Namco Controls
2100 West Broad Street
Elizabethtown, NC 28337

SUBJECT: NAMCO CONTROLS NUCLEAR REGULATORY COMMISSION INSPECTION REPORT NO. 99901470/2023-201, AND NOTICE OF NONCONFORMANCE

Dear Mr. Turrentine:

On September 25-29, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Namco Controls (hereafter referred to as Namco) facility in Elizabethtown, NC. The purpose of this limited-scope routine inspection was to assess Namco's compliance with the 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 Namco's implementation of the quality activities associated with the design, manufacturing, testing and commercial grade dedication activities of safety-related limit switches being supplied to U.S nuclear power plants. The enclosed report presents the results of the inspection. This NRC inspection report does not constitute NRC's endorsement of Namco's overall quality assurance or 10 CFR Part 21 programs.

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. The NRC inspection team determined that Namco was not fully implementing its QA program in the area of Criterion XVI, "Corrective Action," of Appendix B to 10 CFR Part 50. Specifically, the NRC inspection team determined that Namco failed to implement adequate corrective actions to address issues identified in Nonconformance 99901470/2016-202-02 and 99901470/2016-202-04 documented in inspection report No. 99901470/2016-202, dated August 29, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16238A509). The specific finding and references to the pertinent requirements are identified in the enclosures to this letter. In response to the enclosed notice of nonconformance (NON), Namco should document the results of the extent of condition review for the finding and determine if there are any effects on safety-related components.

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 “Rules of Practice,” the NRC will make available electronically for public inspection a copy of this letter, its enclosure, and your response through the NRC’s Public Document Room or from the NRC’s ADAMS, which is 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 (SGI) 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 SGI 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,

Signed by Kavanagh, Kerri
on 11/03/23

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

Docket No.: 99901470

EPID No.: I-2023-201-0050

Enclosures:
1. Notice of Nonconformance
2. Inspection Report No. 99901470/2023-201
   and Attachment

SUBJECT: NAMCO CONTROLS NUCLEAR REGULATORY COMMISSION INSPECTION REPORT NO. 99901470/2023-201, NOTICE OF NONCONFORMANCE
DATE: November 3, 2023

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ADAMS Accession No.: ML23293A275 **NRR-106**

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DATE	10/23/2023	10/23/2023	10/24/2023
OFFICE	NRR/DRO/IQVB	NRR/DRO/IQVB	
NAME	SDowney	KKavanagh	
DATE	10/23/2023	11/3/2023	

NOTICE OF NONCONFORMANCE

Namco Controls
2100 West Broad Street
Elizabethtown, NC 28337

Docket No. 9990170
Report No. 2023-201

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Namco Controls (hereafter referred to as Namco) facility in Elizabethtown, NC, from September 25 through September 29, 2023, Namco did not conduct certain activities in accordance with NRC requirements that were contractually imposed upon Namco by its customers or NRC licensees:

A. Criterion XVI, "Corrective Action," 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," 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 XVI, "Corrective Action," Paragraph 2.1, "Corrective Action" of the Namco Controls Corporation Quality Manual, Revision R, dated November 2022, states in part that, "Conditions adverse to quality identified on internal product, Quality Program nonconformances, or supplier product shall be promptly identified and corrected in a Corrective Action System."

Contrary to the above, as of September 29, 2023, Namco failed to promptly identify and correct conditions adverse to quality. Specifically, no corrective actions were implemented by Namco to address two of the four findings in the 2016 NRC inspection report No. 99901470/2016-202, dated August 29, 2016 (ADAMS Accession No. ML16238A509). As a result, the NRC inspection team identified the following examples of the reoccurrence of issues identified in the August 2016 inspection:

1. Namco failed to provide objective evidence that nonconforming items dispositioned as "re-work" were re-inspected to original specification requirements, as required by Namco Standard Procedure 60-0004 "Processing Nonconforming Material, Parts, Components and Services". This issue was previously identified as part of NON 99901470/2016-202-02.

2. Namco failed to ensure that for mandatory hold points specified in procedures, the work did not proceed beyond such hold points until the required inspections were complete. This issue was previously identified as part of NON 99901470/2016-202-04.

This issue has been identified as Nonconformance 99901470/2023-201-01.

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 noncompliance; and (4) the date when the corrective action will be completed. Where good cause is shown, the NRC will consider 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 https://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 this Xth day of November 2023

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

Docket No.:	99901470
Report No.:	99901470/2023-201
Vendor:	Namco Controls 2100 West Broad Street Elizabethtown, NC 28337
Vendor Contact:	Mr. Cornell Turrentine Quality Manager Email: cornell.turrentine@sptech.com Phone: 910-879-5845
Nuclear Industry Activity:	Namco Controls' scope of supply includes the design, manufacturing and testing of nuclear qualified solenoids, limit switches, position switches, proximity switches, connectors, cables and electronic and electromechanical devices for U.S. Nuclear Power Plants. Namco is part of a group of core-technology companies, named Specialty Product Technologies, that have combined resources and expertise related to instrumentation and controls.
Inspection Dates:	September 25 - 29, 2023

Inspectors:		
Frankie Vega	NRR/DRO/IQVB	Team Leader
Yiu Law	NRR/DRO/IQVB	Remote
Steven Downey	NRR/DRO/IQVB	
Aaron Armstrong	NRR/DRO/IQVB	

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

EXECUTIVE SUMMARY

Namco Controls
99901470/2023-201

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a limited scope routine inspection at the Namco Controls (hereafter referred to as Namco) facility in Elizabethtown, NC, 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 from September 25 through September 29, 2023. This was the second NRC inspection at the Namco facility.

This technically focused inspection specifically evaluated Namco's implementation of quality activities associated with the supply of safety-related limit switches 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:

- Manufacture of two EA170-31302 limit switches, including the assignment of parts, limit switch assembly, production testing, and associated inspections.

During the course of 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 Defects and Noncompliance," dated February 10, 2023.

The results of the inspection are summarized below.

Nonconforming Materials, Parts, or Components and Corrective Action

The NRC inspection team reviewed Namco'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 the procedures contained sufficient guidance for evaluating nonconforming conditions, ensuring that conditions are evaluated for possible corrective action and checking for 10 CFR Part 21 applicability. The NRC inspection team reviewed a sample of inspection reports (IRs) and corrective action requests (CARs) to verify compliance with regulatory requirements and adherence to Namco's procedures.

In addition, the NRC inspection team reviewed the corrective actions that Namco took to address Nonconformance Nos. 99901470/2016-202-01, 99901470/2016-202-02,

99901470/2016-202-03 and 99901470-2015-202-04, documented in inspection report No. 99901470/2016-202, dated August 29, 2016 (ADAMS Accession No. ML16238A509). Based on this review, the NRC inspection team determined that the corrective actions associated with Nonconformance Nos. 99901470/2016-202-01 and 99901470/2016-202-03 were completed and adequately implemented. The NRC inspection team also determined that no corrective actions were taken to address Nonconformance Nos 99901470/2016-202-02 and 99901470/2016-202-04 as evidenced by the recurrence of issues identified by the NRC inspection team during the August 2016 inspection. Specifically, the NRC Inspection team identified that: (1) Namco failed to provide objective evidence that nonconforming items dispositioned as “re-work” were re-inspected to original specification requirements, as required by Namco procedure NSP60-0004 and (2) Namco failed to ensure that for mandatory hold points specified in procedures, work did not proceed beyond such hold points until the required inspections were complete. As a result of this inspection, the NRC inspection team closed Nonconformance Nos. 99901470/2016-202-01 and 99901470/2016-202-03 and issued Nonconformance 99901470/2023-201-01 for Namco’s failure to correct the issues identified in Nonconformance Nos. 99901470/2016-202-02 and 99901470/2016-202-04, which will remain open. Namco initiated CAR 23-075 to address the remaining unresolved issues.

Inspection Areas

The NRC inspection team determined that Namco established its programs for design control, commercial-grade dedication, procurement document control, supplier oversight, control of special processes, test control, control of measuring and test equipment, 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 Namco is implementing its policies and procedures associated with these programs. In addition, the NRC inspection team determined that Namco 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. 10 CFR Part 21 Program

   a. Inspection Scope

   The U.S. Nuclear Regulatory Commission (NRC) inspection team reviewed Namco Controls' (hereafter referred to as Namco) policies and implementing procedures that govern the implementation of its Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," program to verify compliance with the regulatory requirements. The NRC inspection team evaluated the 10 CFR Part 21 postings and a sample of Namco's purchase orders (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 Namco's nonconformance and corrective action procedures provide a link to its 10 CFR Part 21 program.

   In addition, for a sample of 10 CFR Part 21 evaluations performed by Namco, the NRC inspection team verified that Namco had effectively implemented the requirements for evaluating deviations and failures to comply.

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

2. Design Control and Commercial-Grade Dedication

   a. Inspection Scope

   The NRC inspection team reviewed Namco's policies and implementing procedures that govern the implementation of its design control and commercial-grade dedication (CGD) programs to verify compliance with the requirements of Criterion III, "Design Control," and Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

Design Control

The NRC inspection team reviewed Namco'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. Specifically, the NRC inspection team reviewed three design packages for the following components: (1) EA170 - Series Limit Switches, (2) EA180 - Series Limit Switches and (3) EA740 - Series Limit Switches.

The NRC inspection team confirmed that for the sample of documentation reviewed associated with the design packages, the documentation included the applicable technical and regulatory requirements as required by customer specifications, and Namco's procedures. The NRC inspection team also evaluated how the design specifications were met and how design changes were controlled and approved. The NRC inspection team confirmed that Namco's design control process is being implemented in accordance with the applicable regulatory requirements, and that Namco has correctly translated the design basis into the applicable specifications, drawings, procedures, and instructions. The NRC inspection team verified that Namco's design control process; (1) adequately translated technical and quality requirements into procedures and instructions, (2) applied materials conformed to the material specifications, (3) design activities were effectively controlled by documented instructions and procedures, and (4) design changes were accomplished in accordance with the approved procedures.

The NRC inspection team reviewed the Qualification Test Reports for the EA170, EA180, and EA740 - Series Limit Switches. The NRC inspection team reviewed testing anomalies that were documented and evaluated in these qualification test reports. The NRC inspection team noted that the test anomalies were adequately described, and corrective actions taken to resolve the conditions that were identified. The NRC inspection team also confirmed that any modifications incorporated into the design of the EA170, EA180, and EA740 - Series Limit Switches met the requirements established in the original qualification test plan.

Commercial Grade Dedication

Namco's CGD process consists of developing CGD plans that include: (1) technical evaluation; (2) part identification; (3) safety functions; (4) credible failure mechanisms; (5) critical characteristics and verification methods for acceptance. The NRC inspection team reviewed a sample of CGD packages to assess the implementation of Namco's CGD program. The sample of CGD plans included the following limit switch components: stem, disc, nut, cover disk, seat, disk insert and body stud. Within these CGD plans, the NRC inspection team reviewed: (1) purchase orders (POs); (2) shop orders; (3) technical evaluations; (4) checklists; (5) inspection and test reports; and (6) Certificates of Conformance. The NRC inspection team evaluated the criteria for the identification of item functions, credible failure mechanisms/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 Namco's CGD process. The NRC inspection team confirmed that Namco's CGD process provides reasonable assurance that the items and services being dedicated would perform their intended safety function.

The NRC inspection team reviewed Namco's dedication records for rubber boots, torsion springs, cam follower assemblies, lever shift assemblies, roller slides, retaining clips and gaskets for the EA170, EA180, and EA740 - series limit switches and verified that: (1) the critical characteristics and acceptance methods were correctly specified; (2) the drawings and material specifications containing the associated acceptance criteria for each critical characteristic; and (3) the inspection reports adequately documented the acceptance of the critical characteristics. In addition, the NRC inspection team confirmed the test technician was using calibrated measuring and testing equipment (M&TE) to take the appropriate measurements. Furthermore, the NRC inspection team reviewed the training records of the test technician and confirmed that he was adequately trained and qualified in accordance with Namco's policies and procedures.

The NRC inspection team also reviewed Namco's measures for the use of the International Laboratory Accreditation Cooperation (ILAC) 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. Namco currently implements this process as described in the Nuclear Energy Institute 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 5, 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 design control and commercial-grade dedication programs with Namco'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 Namco is implementing its design control and commercial-grade dedication programs 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 Namco is implementing its policies and procedures associated with the design control and commercial-grade dedication programs. No findings of significance were identified.

3. Procurement Document Control and Supplier Oversight

a. Inspection Scope

The NRC inspection team reviewed Namco's policies and implementing procedures that govern the implementation of its procurement document control and supplier oversight programs to verify compliance with the 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

Namco's Qualified Suppliers List (QSL), a sample of POs, supplier audit reports, commercial grade surveys (CGS) and annual supplier evaluations.

The NRC inspection team reviewed a sample of POs and verified the POs included, as applicable: (1) the scope of work; (2) right of access to the suppliers' facilities; (3) and extension of contractual requirements to sub-suppliers. The NRC inspection team confirmed that the POs adequately invoked the applicable technical, regulatory, and quality requirements.

The NRC inspection team selected a sample of suppliers from the QSL 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 audit reports reviewed, the NRC inspection team verified that the audit reports included, as applicable: (1) an audit plan; (2) any findings identified; and (3) a review by Namco's responsible management. In addition, the NRC inspection team also verified that the audits were performed by qualified auditors. The NRC inspection team also verified that audits performed by the Nuclear Industry Assessment Committee were evaluated by Namco in accordance with its written procedures for applicability to its scope of activities.

The NRC inspection team also discussed the procurement document control and supplier oversight programs with Namco'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 Namco 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 Namco is implementing its policies and procedures associated with the procurement document control and supplier oversight programs. No findings of significance were identified.

4. Control of special processes

a. Inspection Scope

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

At the time of the inspection, powder coating was the only special process being implemented at Namco. The NRC inspection team reviewed the processes for

controlling powder coating of housings for EA170 series limit switches to applicable procedures. The NRC inspection team reviewed the qualification records for personnel qualified to perform powder coating and confirmed that they had completed the required training and maintained their qualifications in accordance with the applicable Namco procedures.

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

5. Test Control

a. Inspection Scope

The NRC inspection team reviewed Namco'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.

While observing the assembly of two EA170-31302 limit switches, the NRC inspection team witnessed all associated production testing, including slow latch testing, trip angle testing, contact resistance testing, and leak testing. The NRC inspection team verified that all testing activities were performed in accordance with Namco's procedures and that all results were evaluated against the acceptance criteria and documented as required by the Assembly Inspection Record. The NRC inspection team also verified that the personnel who performed the tests were qualified in accordance with Namco's procedures.

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

6. Control of Measuring and Test Equipment (M&TE)

a. Inspection Scope

The NRC inspection team reviewed Namco'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.

The NRC inspection team reviewed a sample M&TE used for nuclear applications on the shop floor and verified that each item was assigned a unique recall number, that appropriate calibration stickers were present showing the calibration status, and that calibration dates were current, as required by Namco's procedures. The NRC inspection team also reviewed a sample of calibration records for selected M&TE, which included as-found and as-left conditions, accuracy requirements, calibration results, calibration dates, and the due date for recalibration. While observing the assembly of two EA170-31302 limit switches, the NRC inspection team verified that all M&TE used was properly calibrated, adjusted, and maintained at prescribed intervals prior to use.

The NRC inspection team verified that Namco's M&TE program includes provisions to ensure that M&TE found to be out of calibration is appropriately removed from service to prevent its use. The NRC inspection team also verified that M&TE found out of calibration is evaluated for its potential impact on previous inspections and tests performed, and that the affected M&TE cannot be returned to service until it has been repaired or recalibrated.

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

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

a. Inspection Scope

The NRC inspection team reviewed Namco'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 reviewed a sample of Corrective Action Requests (CARs) and verified that the CARs contain, as applicable, (1) adequate documentation and description of significant conditions adverse to quality (SCAQ) and conditions adverse to quality (CAQ); (2) an appropriate analysis of the cause of these conditions and the corrective actions to prevent recurrence; (3) direction for review and approval by the responsible Namco management to verify effective implementation of the corrective actions; (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 also reviewed Namco's corrective actions in response to the inspection findings identified in NRC Inspection Report (IR) No. 99901470/2016-202, dated August 29, 2016 (ADAMS Accession No. ML16238A509).

The NRC inspection team also discussed the nonconforming materials, parts, or components and corrective action programs with Namco'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

b.1 Corrective Action Associated with Nonconformances 99901470/2016-202-01

Following the August 2016 inspection at Namco, the NRC issued NON 99901470/2016-202-01 for Namco's failure to ensure the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components. The NON also included Namco's failure to establish appropriate measures that included provisions for source evaluation of subcontractors and examinations of products upon delivery. Specifically, Namco failed to adequately verify the material composition critical characteristic of EA-184-70326 contact plates during the examination of products upon delivery. Namco also failed to perform an adequate engineering evaluation for the change in sample population identified from ANSI/ASQC Z1.4-1993 "Sampling Procedures and Tables for Inspection by Attributes" and MIL-STD-105E "Military Standard Sampling Procedures and Tables for Inspection Attributes," to EPRI TR-017218-RI "Guideline for Sampling in the Commercial-Grade Item Acceptance Process," for the control of the critical characteristics for PO 70608 Part Number EA182-91026, and PO 75580, Part Number EA185-93025, when a commercial-grade survey was not conducted to verify that the supplier had lot and batch control to ensure traceability of material.

In its response to NON 99901470/2016-202-01, dated September 6, 2016 (ADAMS Accession No. ML16300A089), Namco initiated Corrective Action/Preventative Action (CAPA) 16-095. In its response, Namco committed to perform commercial grade surveys (Method 2) on suppliers, and to use Method 1 for non-surveyed suppliers. Namco also committed to train inspectors tasked with receiving instructions on the CGD process, and to document additional requirements not captured in Dimensional Inspection Reports on the purchase order as an additional step in the Quality Engineer's Purchase Order review process. In its second response to NON 99901470/2016-202-01, dated December 29, 2016 (ADAMS Accession No. ML17025A385), Namco initiated CAPA 16-118 to address the process around CGD to include Failure Mode and Effect Analysis review and the identification of: critical characteristics, sampling plan selection, and CGD Method through a technical evaluation.

The NRC inspection team reviewed documentation that provided objective evidence for the completion of the corrective actions, including a review of CAPAs 16-095 and 16-118. The NRC inspection team confirmed that Namco has updated its CGD plan to include material composition as part of its critical characteristic verification for commercial-grade dedicated parts and components. The NRC inspection team verified that Namco has updated its CGD and sampling procedures in accordance with the sampling plans in EPRI TR-017218-RI. The NRC inspection team verified that engineering evaluations are being performed as part of the CGD plan. The NRC inspection team verified that commercial grade surveys are performed for suppliers, and CGD Method 1 is used for non-surveyed suppliers. The NRC inspection team also verified that the Namco staff has been trained to the most current CGD procedure.

The NRC inspection team determined that Namco’s corrective actions were adequately implemented to address NON 99901470/2016-202-01.

b.2 Corrective Action Associated with Nonconformances 99901470/2016-202-02

Following the August 2016 inspection at Namco, the NRC issued NON 99901470/2016-202-02 and identified four examples of Namco’s failure to establish measures to identify, control, document, segregate, and disposition materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation, and failure to review, accept, reject, repair or rework nonconforming items in accordance with documented procedures.

In its response to NON 99901470/2016-202-02, dated September 16, 2016, Namco committed to revise procedure NSP60-0004, “Processing Nonconforming Material, Parts, Components and Services,” to incorporate requirements intended to avoid future noncompliance. The procedure revisions include language that requires more detailed technical justification to support the rationale for the “Use As-Is” disposition for nonconforming material; language that mandates even single quantity rejections be captured and written up on an inspection report (IR); and language to address the requirements for detailed instructions for rework, inspection results, and sort result details on the bottom of the IR or on a Floor Job Instruction should the level of detail required to perform the work necessitate. During the September 2023 inspection, the NRC inspection team noted that the issues identified in NON 99901470/2016-202-02

had not been entered into Namco's corrective action program and that response letter, dated September 16, 2016, was the only document that captured Namco's committed corrective actions.

The NRC inspection team reviewed procedure NSP60-0004, Revision U, dated September 13, 2019, to determine whether any revisions were made to address the issues identified during the August 2016 inspection. Based on this review, the NRC inspection team determined that NSP60-0004 was updated to require that a technical justification be provided for all "Use As Is" dispositions. In addition, the NRC inspection team noted that NSP60-0004 made no mention of nonconformance reports (NCRs) and only identified IRs as the vehicle for dispositioning nonconformances. However, the NRC inspection team also identified that NSP60-0004 had not been updated to provide specific language mandating that even single quantity rejections be captured and written up on an IR. In addition, the NRC inspection team did not identify any revisions to the procedure intended to satisfy the commitment to revise NSP60-0004 to provide requirements for detailed instructions for rework, inspection results, and sort result details on the bottom of the IR or on a Floor Job Instruction.

The inspection team reviewed 30 IRs generated for nonconforming parts between January 2021 and September 2023 in order to determine whether the issues identified during the August 2016 inspection were still occurring. Based on this review, the NRC inspection team determined that IRs are being consistently used to disposition nonconformances, technical justifications are being provided for all "Use As-is" dispositions, and single quantity rejections are being captured in an IR. However, the NRC inspection team also found that, for nonconformances dispositioned as "re-work" (IR #s: 30-6791,30-6828, 30-6835, 30-7039, 30-7041), there was no objective evidence provided that the reworked items were re-inspected to original specification requirements as required by NSP60-0004. Specifically, after rework was performed, Namco staff would update the original IR by adding a note in the "Remarks" section of the form to state that the item was reworked and to provide the date and quantity of items as applicable. Two of the five IRs dispositioned as re-work had multiple iterations of rework performed on different dates all documented on the same IR form. In response to questions regarding the process for documenting rework and the available objective evidence or rework inspections, Namco staff indicated that the quality inspector's signature next to the rework note on the IR form is the evidence that the reworked items were inspected. The NRC inspection team found that, for all examples identified, there were no additional IRs, or other documents, generated to show that the reworked items were re-inspected to the original specification requirements. This practice is contrary to the requirements of NCP60-0004, which requires that reworked, or repaired, material be re-inspected to the original specification requirements and then documented on the appropriate form(s). On this basis and given that the issues identified in NON 99901470/2016-202-02 were not entered into Namco's corrective action program, the NRC inspection team determined that Nonconformance 99901470/2016-202-02 remains open. The NRC inspection team also identified NON 99901470/2023-201-01 for Namco's recurring failure to ensure that objective evidence is provided for rework inspections as required by NCP60-0004 for IRs dispositioned as "re-work."

b.3 Corrective Action Associated with Nonconformances 99901470/2016-202-03

Following the August 2016 inspection at Namco, the NRC issued NON 99901470/2016-202-03 for Namco's failure to provide measures to assure significant conditions adverse to quality were promptly corrected in order to preclude repetition. Specifically, the NRC inspection team identified three examples where Namco opened and closed CARs but the corrective actions where ineffective to correct the significant condition adverse to quality and did not adequately verify implementation. The issues identified include Namco's failure to complete corrective actions required by CAPA 15-171 for Contact Block EA181-60010, and NAMCO's failure to correct CAPA/NCR Ref. No.: E04450 and Engineering Change Request (ECR) 4547 for incorrect dimensions to Namco contact carrier EA184-43031 drawing.

In its response to NON 99901470/2016-202-03, dated September 16, 2016, Namco committed to revise the work instructions to address the pressure required to properly assemble contact block EA181-60010. Specifically, Namco committed to revise Nuclear Product Work Order Routing for Part Number EA181-60010, Sequence 30, to add "SET PRESS TO 500 (+/- 10%) psi & STAKE." Namco also stated in its response that ECR E04450 has been closed as "rejected" with the note "Duplicate: see ECR E04547." At the time of the letter, ECR E04547 had not been released and was awaiting Engineering review and sign-off.

The NRC inspection team reviewed the applicable drawing for contact block EA181-60010 and verified that the drawing has been updated to include the 500 (+/- 10%) psi requirement. The NRC inspection team reviewed inspection reports for contact block EA181-60010 and verified that the 500 (+/- 10%) psi requirement has been implemented. The NRC inspection team also verified that ECR E04450 and ECR E04547 have been closed and the correct dimension has been updated in the drawing for the contact carrier.

The NRC inspection team determined that Namco's corrective actions were adequately implemented to address NON 99901470/2016-202-03.

b.4 Corrective Action Associated with Nonconformances 99901470/2016-202-04

Following the August 2016 inspection at Namco, the NRC issued NON 99901470/2016-202-04 for Namco's failure to ensure that activities affecting quality were performed in accordance with work instruction QF-24A, "Assembly Inspection Record for EA170/EA180 Limit Switches," Revision K, and for Namco's failure to ensure that work instruction QF-24B, "Assembly Inspection Record for EA740 Limit Switches," Revision H, included appropriate quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Specific examples of this issue included the failure to perform activities required by QF-24A, the failure to ensure adherence to mandatory hold points specified in QF-24A, and the failure to include appropriate acceptance criteria for Trip Angle Tests in QF-24B.

In its response to NON 99901470/2016-202-04, dated September 16, 2016, Namco committed to review QF-24A, Revision K, taking into consideration the findings, to determine acceptable changes that will not affect the qualification of the limit switches. Namco also committed to update the QF-24B, Revision H, to provide quantitative

acceptance criteria for the trip travel test. The response stated that all updates were to be completed by November 15, 2016. During the September 2023 inspection, the NRC inspection team noted that the issues identified in NON 99901470/2016-202-04 had not been entered into Namco's corrective action program, and that the response letter, dated September 16, 2016, was the only document that captured Namco's committed corrective actions.

The NRC inspection team reviewed QF-24A, Revision T, and QF-24B, Revision N, to determine whether any revisions were made to address the issues identified during the August 2016 inspection. Based on this review, the NRC team confirmed that QF-24B, Revision N, included quantitative acceptance criteria for the Trip Angle Test. The NRC inspection team also noted that Namco's review of QF-24A did not result in any changes to the procedure by the deadline provided in its response letter. The NRC inspection team noted that the revision history of QF-24A showed that it was completely rewritten in December 2016.

On September 26, 2023, the NRC inspection team observed the assembly of two EA170 series limit switches in order to determine whether the previously identified issues regarding adherence to QF-24A were still occurring. During the observation, the NRC inspection team observed that, in lieu of verbatim compliance with QF-24A, Revision T, the Namco staff performed some tasks based on their knowledge of the process and efficiencies gained by performing certain steps in a different order. For example, the NRC inspection team witnessed the Namco nuclear assembler proceed to conduct portions of the Electrical Contact Assembly section of QF-24A, Revision T, bypassing a hold point, prior to completing and verifying completion of the previous Mechanical Operation Test section. The Namco quality inspector was present and directly observing the assembly process. The NRC inspection team noted that this scenario was similar to the procedure adherence issues identified during the August 2016 inspection. On this basis and given that the issues identified in NON 99901470/2016-202-04 were not entered into Namco's corrective action program, the NRC inspection team determined that Nonconformance 99901470/2016-202-04 remains open. The NRC inspection team also identified NON 99901470/2023-201-01 for Namco's failure to correct the issues identified in NON 99901470/2016-202-04 as evidenced by the reoccurrence of the same procedure adherence issues identified during the August 2016 inspection.

c. Conclusion

The NRC inspection team issued NON 99901470/2023-201-01 for Namco's failure to implement the requirements of Criterion XVI of Appendix B to 10 CFR Part 50. NON 99901470/2023-201-01 cites Namco for failing to promptly identify and correct conditions adverse to quality. Specifically, no corrective actions were implemented by Namco to address the two of the four findings in the 2016 NRC inspection Report 99901470/2016-202. As a result of the ineffective corrective actions, the NRC inspection team identified two examples of recurring issues similar to those previously identified in the 2016 NRC inspection.

8. Internal Audits

a. Inspection Scope

The NRC inspection team reviewed Namco's policies and implementing procedures that govern its internal audit 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 Namco's internal audit plans, internal audit reports, and CARs generated during internal audits when applicable. The NRC inspection team verified that internal audits have been scheduled at least annually and had been conducted using a checklist to ensure that all applicable regulatory and QA requirements and criteria were evaluated. The checklists contained an adequate level of objective evidence to support whether the criteria were met or not. The NRC inspection team also verified that the internal audit documents were reviewed by Namco's responsible management and that Namco entered conditions identified during internal audits into their corrective action program. In addition, the NRC inspection team verified that Namco's procedures described the scope and purpose of audits to be performed, the frequency, audit criteria, and CARs when required. The NRC inspection team verified that the internal audits were performed by qualified auditors, and that these audits were performed by personnel not having direct responsibilities in the areas being audited.

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

9. Entrance and Exit Meetings

On September 25, the NRC inspection team discussed the scope of the inspection with Mr. Cornell Turrentine, Namco Quality Manager, and other members of Namco's management and technical staff. On September 29, 2023, the NRC inspection team presented the inspection results and observations during an exit meeting with Mr. Adam Badders, Namco's Director of Operations, Mr. Turrentine and other members of Namco'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
Adam Badders	Director of Operations	Namco		X	
Cornell Turrentine	Quality Manager	Namco	X	X	X
Richard Skalski	Sr. Quality Engineer	Namco	X	X	X
Joseph Pfaffenberger	Mechanical Design Engineer	Namco	X		X
Stephen Oneufer	Mechanical Engineer	Namco		X	
Anthony Allen	Quality Engineer	Namco	X	X	X
Troy Carson	Team Leader	Namco	X	X	X
Frankie Vega	NRC Inspector	NRC	X	X	
Aaron Armstrong	NRC Inspector	NRC	X	X	
Steve Downey	NRC Inspector	NRC	X	X	
Yiu Law*	NRC Inspector	NRC	X	X	
Kerri Kavanagh	NRC Branch Chief	NRC		X	
Arlisha Rhoda	Assembler	Namco			X
Brenda Ward	Inspector	Namco			X
Michael Goetsch	Calibration Technician	Namco			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
99901470/2016-202-01	CLOSED	Nonconformance	Criterion III, VII
99901470/2016-202-02	OPEN	Nonconformance	Criterion XV
99901470/2016-202-03	CLOSED	Nonconformance	Criterion XVI
99901470/2016-202-04	OPEN	Nonconformance	Criterion V
99901470/2023-201-01	OPEN	Nonconformance	Criterion XVI

4. DOCUMENTS REVIEWED

Policies, Procedures, and Work Instructions

- CPM-000, “Calibration System Manual”, Revision AE, September 18, 2023
- QAM, Section IV, Procurement Document Control
- NSP20-0008, “Test Lab Procedure for Testing of Components for use in Nuclear Power Plants”, REV K, April 28, 2021.
- NSP20-0012, “Qualified Products Engineering Department Procedure for Identification and Documentation of Important Features,” dated October 2002
- NSP 60-0004 “Processing Nonconforming Material, Parts, Components and Services” Revision U, dated September 19, 2023
- NSP 60-0005 “Qualification of Suppliers” Revision V, dated January 9, 2023
- NSP 60-0006 “Guidelines for Auditing Quality Systems” Revision R, dated March 2, 2023
- NSP 60-0009 “Procedures for Personnel Training and Qualification”, Revision L, dated July 17, 2023
- NSP 60-0011 “Corrective Action Requests” Revision P, dated April 28, 2021
- NSP60-0012 “Reporting of Defects per 10CFR Part 21”, Revision J, dated April 28, 2021
- NSP 60-0015 “Acceptance Sampling Procedure”, Revision J, dated April 4, 2018
- NSP 60-0019 “Control of Purchases” Revision P, dated December 20, 2022
- NSP 60-0019, Control of Purchasing, Revision P, dated December 20, 2022
- NSP60-0022, “Acceptance of Parts Through Commercial Grade Dedication and 10 CFR 50 Appendix B, Revision B, dated March 2, 2023
- QF-24A, “Assembly Inspection Record for EA170/EA180 Limit Switches”, Revision T
- QF-24B, “Assembly Inspection Record EA740 Limit Switches”, Revision N

Design Control and Commercial-Grade Dedication Records

- TE-2023-006, “Latch: EA184-23014,” Revision 1, dated August 15, 2023
- TE-2023-008, “Latch: EA184-23044,” Revision 1, dated August 16, 2023
- TE-2023-009, “Spring Lever: EA184-43054,” Revision 1, dated August 16, 2023
- TE-2023-010, “Rocker: EA185-53004,” Revision 1, dated August 16, 2023
- TE-2023-011, “Roller Slide: EA186-20012 and EA186-23015,” Revision 1, dated August 17, 2023
- TE-2023-016, “C-Spring: EH110-03005,” Revision 1, dated August 24, 2023
- TE-2023-017, “Compression Spring: EH160-03297,” Revision 1, dated August 24, 2023
- TE-2023-018, “Torsion Spring: EH160-03636,” Revision 1, dated August 25, 2023
- LP2016-2-DOC001, “Adjusted Sampling Plans for Suppliers that have not been Surveyed within 36 Months, Method 1: Commercial Grade Dedication,” June 9, 2016

Procurement Records, External Audit Reports, and Annual Evaluations

- Annual Supplier Questionnaire, dated April 5, 2023
- Annual Supplier Questionnaire, dated March 8, 2023
- Annual Supplier Questionnaire, dated November 18, 2022
- Supplier Audit report, NIAC Audit 26074, dated March 8, 2021
- Annual Supplier Questionnaire, dated July 14, 2023
- Annual Supplier Questionnaire, dated March 8, 2023
- Annual Supplier Questionnaire, dated August 23, 2023
- Commercial Grade item survey checklist, Survey No. ECMT-01-2022, survey dates June 16-17, 2022
- A2LA Accreditation Certificate, dated March 31, 2025
- A2LA Accreditation Certificate, dated May 3, 2025
- P.O. 186734, dated February 13, 2023
- P.O. 195194, dated August 03, 2023
- P.O 171192, dated May 4, 2022
- P.O. 163507, dated December 17, 2021
- P.O. 167567, dated February 17, 2022
- P.O. 172390 dated May 31, 2022
- P.O. 193326 dated June 15, 2023
- P.O. 03163570, Revision 1, dated June 13, 2023
- P.O. 01386591, Revision 1, dated March 10, 2023
- P.O. 61108165, Revision 0, dated August 22, 2023

Internal Audits Reports

- Audit Report Int-2022-01 “Specialty Product Technologies-Namco”, audit dates December 5, 2022-February 27, 2023, Report date: March 17, 2023
- Audit Report Int-2021-01 “Specialty Product Technologies-Namco Internal audit”, audit dates November 15, 2021-December 17, 2021, Report date: February 09, 2022
- Audit Report INT-2020-01” Speciality Product Technologies-Namco Internal audit” audit dates November 16, 2020-December 18, 2020, Report Date January 25, 2021.

Corrective Action Requests (CARs)

- CAR No 15-171, dated November 30, 2015
- CAR No 16-098, dated May 8, 2017
- CAR No 16-118, dated June 15, 2017
- CAR No 20-043, dated August 17, 2020
- CAR No 21-037, dated April 23, 2021
- CAR No 22-004, dated March 8, 2022
- CAR No 22-005, dated March 10, 2022
- CAR No 22-006, dated March 14, 2022
- CAR No 22-007, dated March 8, 2022
- CAR No 22-008, dated March 2, 2022
- CAR No 22-011, dated March 10, 2022
- CAR No 22-012, dated March 10, 2022
- CAR No 22-013, dated March 10, 2022
- CAR No 22-015, dated March 7, 2022
- CAR No 22-022, dated May 9, 2022
- CAR No 22-033, dated August 18, 2022
- CAR No 22-044, dated November 2, 2022
- CAR No 23-003, dated January 19, 2023
- CAR No 23-017, dated March 16, 2023
- CAR No 23-019, dated, March 16, 2023
- CAR No 23-020, dated March 16, 2023
- CAR No 23-023, dated March 16, 2023
- CAR No 23-039, dated May 31, 2023

CARs Opened During the NRC Inspection

- CAR-23-071, dated September 28, 2023
- CAR-23-072, dated September 28, 2023
- CAR-23-073, dated September 28, 2023
- CAR-23-074, dated September 28, 2023
- CAR-23-075, dated September 28, 2023
- CAR-23-076, dated September 28, 2023
- CAR-23-077, dated September 28, 2023
- CAR-23-078, dated September 28, 2023
- CAR-23-079, dated September 28, 2023
- CAR-23-080, dated September 28, 2023

10 CFR Part 21 Screening and Evaluation Reports

- LP2020-2001, “EA740 Series Limit Switch Housing NPT Tapped Hole Non-Conformance Part 21 Evaluation – Final Report,” dated July 2020

- LP2020-3, “Alternate Materials Used in Gen 3 EA120-1200A Switches,” Rev. 0, dated April 2, 2020
- LP2020-4001, “Foreign Material in Manufacturing Cell Part 21 Evaluation – Final Report,” dated July 2020
- LP2020-6, “Results of Study on Two Non-Functioning Gen 3 Limit Switches,” dated May 13, 2020
- LP2020-8001, “Justification for Use of EA120 Magnets without Material Testing,” dated June 24, 2020
- LP2021-01, “Re-Qualification of EA180 Series Switches to IEEE 382-2006,” dated January 6, 2021
- LP2022-02, “Recommendation to Terminate Part 21 Investigation LP-2022-02,” dated September 14, 2022

M&TE Calibration Records

- Calibration Certification Report, 0-1” Digital Micrometer, ID#: 25030467, October 27, 2022
- Calibration Certification Report, 0.2490/0.2500 Go/Nogo Class X-Plug Gage, ID#: 227519-2, October 12, 2022
- Calibration Certification Report, 0.61-.250 inch CLS-ZZ Plus Pin Gage Set, ID#: PGS-2A, July 17, 2023
- Calibration Certification Report, AC/DC Hypot Tester, ID#: 9810217, June 21, 2023
- Calibration Certification Report, Cylindrical Plug, ID#: SPE-4, March 27, 2023
- Calibration Certification Report, Digital Multimeter, ID#: 8017715, June 22, 2023
- Calibration Certification Report, Ohmmeter, ID#: 121516-01, March 23, 2023
- Calibration Certification Report, Ohmmeter, ID#: 121516-02, November 15, 2022
- Calibration Certification Report, Ohmmeter, ID#: 121516-03, November 15, 2022
- Calibration Certification Report, Ohmmeter, ID#: 121516-04, March 23, 2023
- Calibration Certification Report, Ohmmeter, ID#: 121516-05, March 23, 2023
- Calibration Certification Report, Ohmmeter, ID#: 121516-06, November 15, 2022
- Calibration Certification Report, Ohmmeter, ID#: 121516-07, November 15, 2022
- Calibration Certification Report, Ohmmeter, ID#: 121516-08, March 23, 2023
- Calibration Certification Report, Pressure Gage 0-60PSI, ID#: 633, May 17, 2023
- Calibration Certification Report, Scale, ID#: 2635409-7LE, November 15, 2022
- Calibration Certification Report, Screw Gun, ID#: 1502396MR, April 10, 2023
- Calibration Certification Report, Torque Screwdriver, ID#: 8220019, December 5, 2022
- Out of Calibration or Limited Calibration Recall Report, Pin Gage Set P/N: PGS-2A, July 21, 2023

Dimensional Inspection Records

- Dimensional Inspection Record, Bottom Cover P/N: EA173-03006, March 16, 2023
- Dimensional Inspection Record, Cam B1 & B2 Powdered Metal P/N: EA742-12200, December 30, 2020.
- Dimensional Inspection Record, Contact Strip Assembly P/N: EA741-12601, September 22, 2023

- Dimensional Inspection Record, Housing, Ground P/N: EA183-93012, December 28, 2021
- Dimensional Inspection Record, Housing, Impregnated P/N: EA183-73003, February 16, 2022
- Dimensional Inspection Record, Housing, Impregnated P/N: EA183-73003, March 15, 2023
- Dimensional Inspection Record, Housing, Impregnated P/N: EA742-23702, April 23, 2021
- Dimensional Inspection Record, Housing-Lock P/N: EA123-00001, September 11, 2020
- Dimensional Inspection Record, Housing Machined P/N: EA183-73003, June 14, 2021
- Dimensional Inspection Record, Housing Machined P/N: EA742-23702, March 3, 2021
- Dimensional Inspection Record, Housing Machined P/N: EA742-23702, July 13, 2021
- Dimensional Inspection Record, Housing, Painted P/N: EA173-73004, April 19, 2023
- Dimensional Inspection Record, Rocker P/N: EA185-53014, January 31, 2022
- Dimensional Inspection Record, Roller Slide P/N: EA186-23015, February 16, 2021
- Dimensional Inspection Record, Wyatt Seal: EH080-00004, January 31, 2023Dimensional Inspection Record and Drawing for Part #EA080-0004, “O-RING,” Revision S, dated January 31, 2023
- Dimensional Inspection Record and Drawing for Part #EA745-11704, “Rubber Boot,” Revision P, dated January 17, 2023
- Dimensional Inspection Record and Drawing for Part #EA160-03638, “Torsion Spring,” Revision E, dated June28 2023
- Dimensional Inspection Record and Drawing for Part #EA741-16301, “Cam Follower Assembly,” Revision k, dated September 25, 2023
- Dimensional Inspection Record and Drawing for Part #EA176-10119, “Lever Shaft Assembly,” Revision J, dated September 6, 2023
- Dimensional Inspection Record and Drawing for Part #EA186-23015, “Roller Slide, Nichols Plated,” Revision AF, dated February 16, 2021
- Dimensional Inspection Record and Drawing for Part #EA460-00015, “Clip, Retaining,” Revision K, dated February 9, 2023
- Dimensional Inspection Record and Drawing for Part #EA187-90020, “Top Cover Gasket,” Revision C, dated September 6, 2023

<u>Inspection Reports generated for Nonconformances</u>

- IR #30-5024, Contact Carrier EA184-43031, December 2, 2014
- IR #30-5177, Contact Carrier EA184-43031, February 23, 2015
- IR #30-6775, Cam P/N: EA742-12200, January 27, 2021
- IR #30-6783, Housing Lock P/N: EA123-00001, February 11, 2021
- IR #30-6791, Housing Machined P/N: EA742-23702, March 3, 2021
- IR #30-6815, Housing P/N: EA742-23702, April 23, 2021
- IR #30-6828, Housing Machined P/N: EA183-73003, June 14, 2021
- IR #30-6829, Megohmmeter p/N: 2635, June 17, 2021
- IR #30-6833, Housing Machined P/N: EA183-73003, June 29, 2021
- IR #30-6835, Housing Machined P/N: EA742-23702, July 13, 2021
- IR #30-6841, Lab temperature P/N: NA, August 11, 2021
- IR #30-6879, Housing Machined P/N: EA183-93012, December 28, 2021
- IR #30-6884, Gasket Material P/N: RM635-10041, January 19, 2022

- IR #30-6888, Rocker P/N: EA185-53014, January 31, 2022
- IR #30-6889, Silicon Rubber Sheet P/N: RM635-10041, February 1, 2022
- IR #30-6897, Housing Impregnated P/N: EA183-73003, February 16, 2022
- IR #30-6975, Housing Machined P/N: EA183-73003, September 1, 2022
- IR #30-6976, Housing Machined P/N: EA183-73003, September 8, 2022
- IR #30-6977, Housing Impregnated P/N: EA742-23702, September 9, 2022
- IR #30-6978, Contact Strip Assembly P/N: EA741-12601, September 13, 2022
- IR #30-6979, Circuit Label P/N: EA185-10000, September 19, 2022
- IR #30-6980, Latch Assembly P/N: EA741-14320, September 19, 2022
- IR #30-6981, Latch Assembly P/N: EA741-14319, September 19, 2022
- IR #30-6982, Contact Block P/N: EA745-21631, September 22, 2022
- IR #30-6983, O-ring P/N: EC297-20002, September 28, 2022
- IR #30-6894, Housing Machined P/N: EA742-23702, September 29, 2022
- IR #30-7003, Housing Machined P/N: EA742-23702, November 11, 2026
- IR #30-7022, Housing Machined P/N: EA183-73003, January 4, 2023
- IR #30-7039, Housing Machined P/N: EA183-73003, February 28, 2023
- IR #30-7040, Housing Impregnated P/N: EA183-73003, March 15, 2023
- IR #30-7041, Bottom Cover P/N: EA173-03006, March 16, 2023
- IR #30-7077, Contact Assembly P/N: EA741-12601, September 22, 2023
- IR #30-7078, Housing Machined P/N EA742-23702, September 27, 2023

Training and Qualification Records

- Qualification Records for Namco Assembler Arlisha Rhoda
- Qualification Records for Namco Inspector Brenda Ward
- Qualifications Records for lead auditor – Richard E. Skalski

Drawings

- Drawing EH400-00204, “Paint Process, Gray Epoxy”, Revision E
- Drawing EA184-43030, “Contact Carrier,” Revision E
- Drawing EA 181-53030, “Contact Block & Insert,” Revision D
- Drawing RM953-10001, “Thermoset Plastic - Rogers R1865M,” Revision A, dated November 3, 1999
- Drawing EA181-53030, “Contact Block and Insert,” Revision E, dated February 23, 2016
- Drawing EA189-10005, “Lubrication product for EA180 series nuclear switches,” Revision 5, dated July 23, 2016

Assembly Inspection Records (AIRs)

- Namco controls assembly inspection record for EA740 limit switch AE740-80000 for order #431071, dated June 13, 2023
- Namco controls assembly inspection record EA180 limit switch EA180-21302 for work order #430986, Revision X, dated May6, 2023
- Namco controls assembly inspection record EA170 limit switch EA170-32302 for work order #431230, Revision V, dated September 22, 2023

Certificates of Compliance

- Certificate of Compliance for EA470-80000 for PO #3163570, Revision 1, dated June 14, 2023
- Certificate of Compliance for EA180-21302 for PO #01386591, Revision 1, dated March 1, 2023
- Certificate of Compliance for EA170-32302 for PO #61108165, Revision 0, dated September 22, 2023
- Certificate of Conformance/Compliance for PO 163507, dated January 9, 2023
- Certificate of Conformance/Compliance for PO 172390, date November 9, 2022
- Certificate of Conformance/Compliance for PO 193326, dated July 6, 2023
- Certificate of Compliance for PO 10503919, dated February 1, 2016

Miscellaneous

- Job Instruction 21610, “Powder Coat Pre-Treatment Etch Bath Requirements”, Revision A, April 9, 2021
- Job Instruction 05701, “Pre-Treating Housing & Powder Coating, Revision D, October 25, 2018
- Drawing EA184-43030, “Contact Carrier,” Revision D
- ECR E04450, “EA184-43031 Rev C Contact Carrier – Update Drawing to Correct Leader Lines,” dated August 30, 2016
- ECR E04547, “Revise EA184-43031 Rev C to Show Correct Dimension (Namco IR 30-5177). 11/17. Update to Rev E per IR 30-6213,” dated November 13, 2018
- Namco production work order and routing work order for 43171, Part EA740-80000, dated June 16, 2023
- Nuclear production work order bill of material for #431071, dated June 16, 2023
- Namco quote #3847A-000 for PO #01386591, Revision 1, dated March 10, 2023
- Nuclear production work order bill of material for work order #430986, revision V, dated May 1, 2023
- Namco production work order and routing work order for 430986, Part EA180-21302, dated May 1 ,2023
- Namco quote #3977A-000 for PO #61108165, Revision 0, dated August 23, 2023
- Namco production work order and routing work order for 431230, Part EA170-32302, dated September 18, 2023
- Nuclear production work order bill of material for work order #431230, revision W, dated September 18, 2023
- Namco Quote #3917A-000 for PO #03163570, Revision 1, dated June 14, 2023