May 7, 2013

Mr. Steve Kahm, Vice President Quality
and Compliance
Meggitt Safety Systems
1915 Voyager Avenue
Simi Valley, CA 93063

SUBJECT: NUCLEAR REGULATORY COMMISSION INSPECTION REPORT NO. 99901421/2013-201 AND NOTICE OF VIOLATION AND NOTICE OF NONCONFORMANCE

Dear Mr. Kahm:

From March 18 to March 21, 2013, the U.S. Nuclear Regulatory Commission (NRC) conducted an inspection at the Meggitt Safety Systems Incorporated (Meggitt) facility in Simi Valley, CA. The enclosed report presents the results of the inspection.

The purpose of the limited-scope inspection was to assess Meggitt'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 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 Meggitt's implementation of quality activities associated with the design, procurement, manufacture, and test of a sample of Class 1E cables and post-accident hydrogen and oxygen containment atmosphere monitoring systems. This NRC inspection report does not constitute NRC endorsement of Meggitt's overall quality assurance (QA) program.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The NRC evaluated the violation in accordance with its enforcement policy, which is available on the NRC's Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html.

The enclosed Notice cites the violation, and the subject inspection report details the circumstances surrounding it. The violation is cited because Meggitt did not establish appropriate procedures to document and evaluate deviations in accordance with 10 CFR Part 21, and in one instance did not complete and document an evaluation.

You are required to respond to this letter and to follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC's review of your response to the Notice also will determine if further enforcement action is necessary to ensure compliance with regulatory requirements.

In addition, the NRC inspection team found that the implementation of your QA program did not meet certain NRC requirements contractually imposed on Meggitt by your customers or NRC

licensees. Specifically, the NRC inspection team determined that Meggitt was not implementing aspects of commercial grade item dedication and welding process programs in a way consistent with regulatory requirements. The enclosures to this letter identify the specific findings and references to the pertinent requirements. In response to the enclosed notice of nonconformance (NON), Meggitt should document the results of the extent of condition review for these findings and determine if there are any effects on other safety-related components.

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

In accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," which is part of the NRC's Rules of Practice, the NRC will make a copy of this letter, its enclosures, and your response available electronically for public inspection in the NRC Public Document Room or from the NRC's document system, Agencywide Documents Access and Management System, accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any private personal or proprietary information or Safeguards Information so that it can be made available to the public without redaction. If private personal 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 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."

Sincerely,

/RA/

Richard A. Rasmussen, Chief
Electrical Vendor Branch
Division of Construction Inspection
and Operational Programs
Office of New Reactors

Docket No.: 99901421

Enclosures:
1. Notice of Violation
2. Notice of Nonconformance
3. Inspection Report 99901421/2013-201

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

In accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," which is part of the NRC's Rules of Practice, the NRC will make a copy of this letter, its enclosures, and your response available electronically for public inspection in the NRC Public Document Room or from the NRC's document system, Agencywide Documents Access and Management System, accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any private personal or proprietary information or Safeguards Information so that it can be made available to the public without redaction. If private personal 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 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."

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ADAMS Accession No.: ML1319A278 **NRC-001**

OFFICE	NRO/DCIP/CEVB	NRO/DCIP/CMVB	NRO/DCIP/CEVB	NRO/DCIP/CAEB
NAME	GGalletti	EHuang	JJacobson	TFrye
DATE	04/30/2013	04/30/2013	04/30/2013	05/02/2013
OFFICE	NRO/DCIP/CEVB			
NAME	RRasmussen			
DATE	05/07/2013			

OFFICIAL RECORD COPY

NOTICE OF VIOLATION

Meggitt Safety Systems, Inc.
1915 Voyager Avenue
Simi Valley, CA 93063

Docket No.: 99901421
Inspection Report No.: 99901421/2013-201

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Meggitt Safety Systems, Inc. ("Meggitt"), facility in Simi Valley, CA, on March 18–21, 2013, inspectors identified a violation of NRC requirements. In accordance with the NRC Enforcement Policy, the violation is listed below:

Subsection (a) of Section 21.21, "Notification of Failure to Comply or Existence of a Defect and its Evaluation," of Part 21, "Reporting of Defects and Noncompliance," of Title 10 of the *Code of Federal Regulations* (10 CFR)—abbreviated in full as 10 CFR 21.21(a)—requires, in part, that "Each individual, corporation partnership, or other entity subject to the regulations in this part shall adopt appropriate procedures to – (a)(1) evaluate deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards as soon as practicable, and, except as provided in paragraph (a)(2) of this section, in all cases within 60 days of discovery and (a)(2) ensure for deviations which cannot be evaluated within 60 days from discovery of the deviation or failure to comply, an interim report must be prepared and submitted to the commission."

10 CFR 21.51, "Maintenance and Inspection of Records," state, in part, that "Each individual, corporation, partnership, dedicating entity, or other entity subject to the regulations in this part shall prepare and maintain records necessary to accomplish the purposes of this part, specifically -- (1) Retain evaluations of all deviations and failures to comply for a minimum of five years after the date of the evaluation; …"

Contrary to the above, as of March 21, 2013, Meggitt failed to adopt appropriate procedures in accordance with 10 CFR 21.21(a)(1) and 10 CFR 21.21(a)(2) and failed to document and evaluate deviations in accordance with 10 CFR 21.51. Specifically, Meggitt's 10 CFR Part 21 implementing procedure, quality assurance procedure (QAP) 6-009, "10CFR21 Reporting Procedure," revision G, failed to include the following provisions:

1. Evaluate deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards as soon as practicable, and, except as provided in paragraph (a)(2) of this section, in all cases within 60 days of discovery, in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected.

2. Ensure that if an evaluation cannot be completed within 60 days from discovery of the deviation or failure to comply, an interim report is prepared and submitted to the Commission through a director or responsible officer or designated person within 60 days of discovery of the deviation or failure to comply.

In addition, Meggitt failed to document and evaluate deviations identified in their corrective action program as required by 10 CFR 21.51. Specifically, CAR 13-007, regarding inspection of commercial grade items, met the criteria established by Meggitt for evaluation for reportablility under 10 CFR Part 21, however, no records were available to confirm that an evaluation had been completed.

These issues have been identified as Violation 99901421/2013-201-01.

This is a Severity Level IV violation (Section 6.9.d of the NRC Enforcement Policy).

Pursuant to the provisions of 10 CFR 2.201, "Notice of Violation," Meggitt is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-001, with a copy to the Chief, Mechanical Vendor Branch, Division of Construction Inspection and Operational Programs, Office of New Reactors, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation;" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may refer to or include previous docketed correspondence if the correspondence adequately addresses the required response. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you also should provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System, accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html, to the extent possible, it should not include any private personal or proprietary information or Safeguards Information so that it can be made available to the public without redaction. If private personal 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."

NOTICE OF NONCONFORMANCE

Meggitt Safety Systems, Inc.
1915 Voyager Avenue
Simi Valley, CA 93063

Docket No.: 99901421
Inspection Report No.: 99901421/2013-201

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Meggitt Systems facility in Simi Valley, CA, from March 18 to March 21, 2013, it appears that certain activities were not conducted in accordance with NRC requirements contractually imposed upon Meggitt by its customers or NRC licensees.

A. Criterion III, "Design Control," of Appendix B to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, states, in part, that "applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions." It also states, in part, that "measures shall be established for 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."

   Criterion V, "Instructions, Procedures, and Drawings," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances…."

   Meggitt Standard Operating Requirements 101, Revision 5, dated January 20, 2009, states, in part, that "Components and Materials used in Meggitt designed products manufactured in accord with Meggitt Safety Systems Appendix B program shall be reviewed considering both the environmental conditions and performance requirements for which each item may be expected to meet."

   Contrary to the above, as of March 20, 2013, Meggitt did not adequately consider both environmental conditions (environmental qualification) and performance requirements (seismic qualification) in establishing the suitability of application of certain safety-related SSCs.

   (1) Meggitt Standard Operating Procedure 108, "Commercial Grade Item Dedication (CGI)," Revision 4, dated October 6, 2008 and QAP 5-009, "Commercial Grade Dedication," Revision F, dated January 5, 2009, do not provide sufficient guidance on the need to consider seismic or environmental qualification when identifying a component's critical characteristics. The procedures also lack guidance on what tests should be performed to ensure design changes have not been made that would invalidate the qualification of commercially procured replacement components.

   As a result, Meggitt's technical evaluation to establish, in part, suitability of application of replacement parts, regarding 120 VAC replacement relays supplied to AREVA under Purchase Order 1010002025, dated January 18, 2010, did not adequately consider seismic or environmental qualification requirements, and subsequently did not require performance of testing or analysis sufficient to ensure

that the replacement parts, were identical in form, fit, and function to those that were previously qualified and tested.

(2) Meggitt's Commercial Grade Dedication sheet, "CGD 015" did not provide sufficient guidance on how to measure input power when testing commercial grade relays and the accompanying data sheet did not provide sufficient evidence that all tests had been satisfactorily performed.

These issues have been identified as Nonconformance 99901421/2013-201-02

B. Criterion V. "Instructions, Procedures, and Drawings," of Appendix B to 10 CFR Part 50 states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

Criterion IX, "Control of special Processes," of Appendix B to 10 CFR Part 50 states, in part, "Measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures…."

Meggitt Procedure MP-378, "Weld Procedure Development, Approval and Control," Revision D, states in part that "all qualification test results shall be reviewed and approved by manufacturing engineering, quality engineering, and production management."

Contrary to the above, as of March 20, 2013, Meggitt did not perform an adequate qualification test evaluation to develop a qualified weld schedule (WS) consistent with the requirements of the welding program and Class 1E cable connector design specifications. In addition, the WS qualification test report had not been adequately reviewed and approved by all of the required engineering disciplines, including manufacturing engineering, as required by MP-378.

Specifically, WS-472, "Butt Weld 304L stainless steel," and the associated weld procedure qualification test record, dated November 23, 2010, failed to adequately document the weld penetration examination results in a way consistent with the requirements of the test and detailed design drawing 133126, "Transition Assembly," revision B, dated August 02, 2010. As a result, the actual weld penetration depths from use of the WS, were inconsistent with the recorded weld qualification test results and detailed design drawing requirements.

This issue has been identified as Nonconformance 99901421/2013-201-03

Please submit 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, Electrical Vendor Branch, Division of Construction Inspection, and Operational Programs, Office of New Reactors, 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, and (4) the date the corrective action will be completed. If you should require more time and can show good cause, the NRC will consider an extended response time.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html), do not include—to the extent possible—any private personal or proprietary information or Safeguards Information so that it can be made available to the public without redaction. If private personal 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 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 at Rockville, MD, this 7th day of May 2013.

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NEW REACTORS
DIVISION OF CONSTRUCTION INSPECTION AND OPERATIONAL PROGRAMS
VENDOR INSPECTION REPORT

Docket No.:	99901421
Report No.:	99901421/2013-201
Vendor:	Meggitt Safety Systems 1915 Voyager Avenue Simi Valley, CA 93063
Vendor Contact:	Mr. Steve Kahm, Vice President Quality & Compliance Steve.kahm@meggitt.com
Inspection Dates:	March 18–21, 2013
Background:	Meggitt Safety Systems is a supplier to the commercial nuclear industry, with its scope of supply including but not limited to: commercial-grade dedication, design, fabrication, assembly, and testing of Class 1E cables and hydrogen and oxygen gas analyzer systems for safety-related applications for both existing and new-construction nuclear power plants.
Inspection team Leader:	Greg Galletti NRO/DCIP/CEVB
Inspectors:	Eugene Huang NRO/DCIP/CEVB Jeffrey Jacobson NRO/DCIP/CEVB
Approved by:	Richard A. Rasmussen, Chief Electrical Vendor Branch Division of Construction Inspection and Operational Programs Office of New Reactors

EXECUTIVE SUMMARY

Meggitt Safety Systems
99901421/2013-201

The U.S. Nuclear Regulatory Commission (NRC) conducted this inspection to verify that Meggitt Safety Systems (Meggitt) implements 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." This technically focused inspection specifically evaluated Meggitt's implementation of quality activities associated with the design, procurement, manufacture, and test of Class 1E cables and hydrogen/oxygen gas analyzer systems. The NRC identified these product lines because they are representative types of components that are anticipated to be used in new reactor construction and are already in use in the United States operating fleet. The NRC conducted this inspection at Meggitt's manufacturing facility in Simi Valley, California.

The following regulations served as the basis for this NRC inspection:

- Appendix B to 10 CFR Part 50
- 10 CFR Part 21, "Reporting of Defects and Noncompliance"

  The inspectors used Inspection Procedures (IPs) 36100,"Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance," dated February 13, 2012; 43002, "Routine Inspections of Nuclear Vendors," dated April 25, 2011; and 43004, "Inspection of Commercial-Grade Dedication Programs," dated April 25, 2011, to conduct this inspection.

With the exception of the violation and nonconformances described below, the NRC inspection team concluded that Meggitt is effectively implementing its QA program in support of the design, manufacturing, and testing of the sampled Class 1E cabling and containment gas analyzer system. The results of this inspection are summarized below.

10 CFR Part 21 Program

The inspectors concluded that Meggitt's 10 CFR Part 21 procedure did not meet the requirements of 10 CFR Part 21. The inspectors identified Violation 99901421/2013-201-01 because Meggitt's did not adequately develop a 10 CFR Part 21 procedure to evaluate deviations and, in one instance did not complete and document an evaluation that was identified in its corrective action program.

Commercial-Grade Dedication

The NRC inspection team concluded that Meggitt has not established a program that adequately controls Commercial-Grade Dedication (CGD) in accordance with the regulatory requirements of Appendix B to 10 CFR Part 50. Specifically, Meggitt is not effectively implementing its CGD program in a way consistent with the requirements of Criterion III, "Design Control," and Criterion V. "Instructions, Procedures, and Drawings," of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99901421/2013-201-02, to document that Meggitt did not develop an adequate technical evaluation for suitability of application of replacement items and adequate procedures for CGD related to the performance

of all electrical testing of relays to ensure that all critical characteristics, including seismic qualification are being maintained.

Design Control

The NRC inspection team concluded that, with the exception of the items identified under commercial grade item dedication, above, Meggitt has established a program that adequately controls design in accordance with the regulatory requirements of Criterion III of Appendix B to 10 CFR Part 50.

Procurement/Supplier Control Program

The NRC inspection team concluded that Meggitt is implementing its oversight of contracted activities in accordance with the regulatory requirements of Criterion IV, “Procurement Document Control,” and Criterion VII, “Control of Purchased Material, Equipment, and Services,” of Appendix B to 10 CFR Part 50.

Special Processes

The NRC inspection team concluded that Meggitt has not established a program that adequately controls special processes in accordance with the regulatory requirements of Criterion III, “Design Control,” and Criterion IX, “Control of Special Processes,” to Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99901421/2013-201-02, to document that Meggitt did not adequately conduct, document, or review a WS qualification test record associated with the development of a weld schedule for a Class 1E cable collar connection.

Inspection

The NRC inspection team concluded that Meggitt has established a program that adequately controls inspection activities under the regulatory requirements of Criterion X, “Inspection,” of Appendix B to 10 CFR Part 50.

Test Control

The NRC inspection team concluded that Meggitt has established a program that adequately controls testing under the regulatory requirements of Criterion XI, “Test Control,” of Appendix B to 10 CFR Part 50.

Nonconformance and Corrective Action Programs

The NRC inspection team concluded that Meggitt has established a program that adequately controls for nonconformance and corrective actions under the regulatory requirements of Criterion XV, “Nonconforming Materials, Parts, or Components,” and Criterion XVI, “Corrective Action,” of Appendix B to 10 CFR Part 50.

Measuring and Test Equipment

The NRC inspection team concluded that Meggitt has established a program that adequately controls calibration and use of measurement and test equipment under the regulatory

requirements of Criterion XII, “Control of Measuring and Test Equipment,” of Appendix B to 10 CFR Part 50.

REPORT DETAILS

1. 10 CFR Part 21 Program

a. Inspection Scope

The NRC inspection team reviewed Meggitt's policies and implementing procedures that govern its program under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 21, "Reporting of Defects and Noncompliance," to verify compliance with this regulation. In addition, the NRC inspection team reviewed Meggitt's implementation of 10 CFR 21.21, "Notification of failure to comply or existence of a defect and its evaluation." To verify an adequate link to the 10 CFR Part 21 process, the NRC inspection team also reviewed Meggitt's processes and procedures that govern corrective actions to verify adequate implementation of the regulatory requirements identifying items that cause conditions adverse to quality. Furthermore, the NRC inspection team discussed the 10 CFR Part 21 program with Meggitt management and technical staff. The attachment to this inspection report lists the documents that the NRC inspection team reviewed.

b. Observations and Findings

b.1 10 CFR Part 21 Policies and Procedures

Quality Assurance Procedure (QAP) 6-009, "10CFR21 reporting procedure," Revision G, establishes the requirements for compliance with the regulatory requirements of 10 CFR Part 21. The procedure defines the process for reporting defects; the posting requirements; the responsibilities, timelines, actions for identifying and evaluating deviations and failures to comply; and the records-retention requirements. The inspectors verified that Meggitt's nonconforming items and corrective action programs provided a connection to the 10 CFR Part 21 program. The inspectors reviewed QAP 6-009 and met with Meggitt's quality assurance (QA) manager to discuss the procedure. Based on discussion with the QA manager, the inspectors determined that Meggitt's QAP 6-009 does not address all of the requirements of 10 CFR Part 21.

Regulations in 10 CFR 21.21(a) state, in part, "(1) Evaluate deviations and failures to comply to identify defects and failures to comply associated with substantial safety hazards as soon as practicable, and, except as provided in paragraph (a)(2) of this section, in all cases within 60 days of discovery, in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected, and (2) Ensure that if an evaluation of an identified deviation or failure to comply potentially associated with a substantial safety hazard cannot be completed within 60 days from discovery of the deviation or failure to comply, an interim report is prepared and submitted to the Commission through a director or responsible officer or designated person as discussed in § 21.21(d)(5). The interim report should describe the deviation or failure to comply that is being evaluated and should also state when the evaluation will be completed. This interim report must be submitted in writing within 60 days of discovery of the deviation or failure to comply."

Contrary to the above, as of March 21, 2013, Meggitt's 10 CFR Part 21 procedure did not include requisite guidance to: (1) evaluate deviations and failures to comply

within 60 days in accordance with paragraph 21.21(a)(1), or (2) file an interim report in accordance with paragraph 21.21(a)(2) if the evaluation cannot be completed.

The inspectors identified these issues as examples of Violation 99901421/2013-201-01.

b.2 10 CFR Part 21 Implementation

The NRC inspection team reviewed a sample of applicable nonconformances and six corrective action reports that were available, to verify that Meggitt adequately screened issues for evaluation within the 10 CFR Part 21 program. The inspectors identified one out of the six corrective action reports (CAR), 13-007, which stated, "Process for inspecting commercial-grade dedication items was not followed properly for part number 116A139P14." The CAR referred to applicable purchase orders that had been filled and shipped. The inspectors asked for the details of the part number to understand the potential safety impact of the part that was shipped, but was unable to obtain the information prior to the end of this inspection. As part of Meggitt's corrective action program and evaluation, the part number and potential safety impact should be evaluated.

Regulations in 10 CFR 21.51, "Maintenance and Inspection of Records," state, in part, that "Each individual, corporation, partnership, dedicating entity, or other entity subject to the regulations in this part shall prepare and maintain records necessary to accomplish the purposes of this part, specifically -- (1) Retain evaluations of all deviations and failures to comply for a minimum of five years after the date of the evaluation."

Meggitt's QAP 6-008, "Corrective action procedure – general," Revision O, step 5.1.2.1.2 states, "If the nonconforming part has a nuclear safety related function and the nonconformance is determined to be not reportable under 10 CFR Part 21, Design Engineering shall evaluate and document the justification for why it is not reportable and provide it to the cognizant Quality Engineer for attachment to the CAR."

Contrary to the above, as of March 21, 2013, the inspectors identified that Part 21 applicability was checked off as required by Meggitt's corrective action procedure for CAR 13-007; however, there was no documentation of a Part 21 evaluation performed to evaluate the deviation to ensure that there was no reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected.

The inspectors identified this issue as an additional example of Violation 99901421/2013-201-01.

b.3 10 CFR Part 21 Postings

The NRC inspection team reviewed the content of the Meggitt Part 21 postings as well as the location of postings at the Meggitt facility. The NRC inspection team verified that the information required by 10 CFR 21.6, "Posting Requirements," was included on the postings. The NRC inspection team walked down the location and

also verified that the required documents were posted in conspicuous locations in a way consistent with the intent of 10 CFR 21.6.

c. Conclusion

The inspectors identified Violation 99901421/2013-201-01 for Meggitt not including the requisite guidance to evaluate deviations and failures to comply within 60 days and to file an interim report if the evaluation cannot be completed within 60 days in its 10 CFR Part 21 procedure, and for an example of Meggitt not documenting an evaluation of deviations and failures to comply as required.

2. Commercial-Grade Dedication

a. Inspection Scope

The NRC inspection team reviewed the processes used by Meggitt to dedicate commercial-grade items (CGI) including parts used in the manufacture of hydrogen analyzer systems and in the supply of safety-related replacement parts. The NRC inspection team reviewed Meggitt Standard Operating Procedure 108, "Commercial Grade Item Dedication (CGI)," Revision 4, dated October 6, 2008, and QAP 5-009, "Commercial Grade Dedication," Revision F, dated January 5, 2009.

The NRC inspection team also reviewed Purchase Order (PO) 1010002025, dated January 18, 2010, from AREVA to Meggitt for five 120-VAC relays. The PO required the relays be certified as being seismically qualified to Meggitt Qualification Report PA 83-9027764-008. The PO also required that Meggitt "extend the applicable AREVA NP Inc. 10CFR50 Appendix B and NQA-1 requirements to all lower tier sub-suppliers." The NRC inspection team reviewed Meggitt PO 42075, dated July 14, 2009, to Newark IN One (an electronics parts distributor) for 15 of these relays, as well as the associated receipt inspection and testing data.

b. Observations and Findings

Dedication of Hydrogen Analyzer Replacement Parts

The NRC inspection team determined that upon receipt of the AREVA PO referenced above, Meggitt procured the relays from a commercial sub-supplier, Newark IN One. While the Meggitt commercial grade dedication(CGD) procedures reviewed provided basic requirements for performing a CGD, the procedures did not provide any guidance on how to dedicate items that were originally subjected to environmental or seismic qualification and are now being procured from commercial-grade sub-suppliers and supplied as replacements items. As a result, Meggitt's technical evaluation to establish, in part, suitability of application of replacement parts, regarding the AREVA PO, did not adequately consider seismic or environmental qualification requirements, and subsequently did not require performance of testing or analysis sufficient to ensure that the replacement parts, were identical in form, fit, and function to those that were previously qualified and tested.

The NRC inspection team reviewed Meggitt's CGD sheet CGD 015, Revision K, for the subject K10P relays. Among the tests performed on each production relay as part of the dedication process were tests for coil resistance, contact resistance, input power, and

insulation resistance. The NRC inspection team identified that the data sheets used to document the CGD activities were lacking sufficient detail to determine that the testing had actually been accomplished. The NRC inspection team noted that the relays being dedicated were not given individual serial numbers by Meggitt and that the only test data recorded was a single signoff saying that all relays passed all tests. Furthermore, the test procedure referred to for performing the input power check, Standard Test Procedure STP-5535, "Single Function Electrical Components," dated August 27, 1993, did not provide guidance on how to measure input power, or under what specific applied voltage ranges the input power measurement should be taken.

The NRC inspection team identified these deficiencies in the testing procedures as an example of Nonconformance 99901421/2013-201-02.

The NRC inspection team identified that originally, similar relays were subjected to seismic testing as part of a qualification program for the hydrogen gas analyzers. Because Meggitt purchases these relays as a commercial-grade item from parts distributors and does not perform audits or surveillance at the relay's original equipment manufacturer, Meggitt has not maintained design control for this product. Furthermore, the NRC inspection team determined that the electrical functional tests referred to above do not provide sufficient assurance that there have been no design changes made to the relays that could invalidate their seismic qualification. The NRC inspection team noted that industry guidance for the types of electrical tests that could be performed on relays that might be sufficient for establishing similarity to previously qualified devices is contained in Electric Power Research Institute TR-112579, "Critical Characteristics for Acceptance of Seismically Sensitive Items," September 2000.

In response to the NRC inspection team's concerns, Meggitt provided a summary of five separate qualification testing reports that have been performed since 1982, for various pieces of its equipment, all of which were stated as having contained the subject relays. The inspection team concluded that while the qualification reports along with the electrical functional tests performed on each relay provide some level of assurance that no design changes have been made that would invalidate the relay's seismic qualification, Meggitt has not established a program on an ongoing basis to ensure that the qualification of subsequently supplied relays would remain valid.

This issue is identified as an example of Nonconformance 99901421/2013-201-02.

Lastly, the NRC inspection team identified that, because the relays supplied by Meggitt to AREVA were procured from a commercial-grade supplier and "dedicated," it did not pass down nuclear quality requirements to its sub-supplier, as was required by the AREVA PO. The NRC inspection team considered this to be a minor issue because, in terms of procurement methods, CGD can be used as an acceptable alternative to buying an item as safety-related if the dedication process is properly performed. Meggitt stated that it would clarify the PO requirements with its customer.

c. <u>Conclusion</u>

The NRC inspection team determined that Meggitt has not established a program that adequately controls CGD in accordance with the regulatory requirements of Appendix B to 10 CFR Part 50. Specifically, Meggitt is not effectively implementing its CGD program in a way consistent with the requirements of Criterion III, "Design Control," and Criterion

V. “Instructions, Procedures, and Drawings,” of Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99901421/2013-201-02, to document that Meggitt did not develop an adequate technical evaluation for replacement parts and failed to develop adequate procedures for CGD related to the performance of all electrical testing of relays to ensure that all critical characteristics, including seismic qualification are being maintained.

3. Design Control

a. Inspection Scope

The NRC inspection team reviewed the design control program, related procedures, a sample of design documents related to Class 1E cabling and the containment gas analyzer system, and interviewed related engineering personnel to determine if Meggitt’s design control program conform with the regulatory requirements of Criterion III, “Design Control,” of Appendix B to 10 CFR Part 50.

In addition, the team reviewed Meggitt ER 03-126, “Summary Report 1E Qualification Testing of the Electrical Connectors and Silicon Insulated Cable Meggitt Safety Systems,” Revision A, dated May 26, 2011, to verify that the vendor was maintaining adequate design control with respect to the results from the initial qualification testing of the Class 1E cabling.

b. Observations and Findings

The team identified that the summary report covered a wide range of cable types and mating connectors supplied by Meggitt, including high-voltage/low-current, thermocouple extension, logic, and power cables. Types of testing included radiation, thermal and vibration aging, seismic, steam, and chemical spray; the testing was performed to Institute of Electrical and Electronics Engineers (IEEE) 323-1983, IEEE 344-1975, and IEEE 383-1974.

The NRC inspection team evaluated a sample of attributes associated with the Class 1E cable designs, and noted that one important attribute is to ensure that sufficient strain relief provided in the connector assembly to allow for thermal expansion and contraction of the cable conductor leads. The team verified that this attribute was appropriately controlled through the manufacturing process.

The NRC Inspection team reviewed Westinghouse 00000-FEA-6102, “Design and Fabrication Specification for Mineral Insulated Cable Assemblies without Integral Reference Junctions,” Revision 08, and verified that performance and design requirements were adequately translated into Meggitt design drawings and test procedures. The NRC inspection team reviewed Meggitt test plans and confirmed that test data requirements were consistent with the design specification.

The NRC inspection team also confirmed, through limited observation of fabrication activities in process, that inspection and fabrication activities, including item cleanliness, and design and material requirements were adequately translated into the work plans for the items reviewed.

c. Conclusion

The NRC inspection team determined that, with the exception of the items identified under commercial grade item dedication, in Section 2, above, Meggitt has established a program that adequately controls design in accordance with the regulatory requirements of Criterion III of Appendix B to 10 CFR Part 50. Based on the limited sample of Meggitt design-relevant documentation reviewed and interviews with Meggitt staff, the inspectors determined that Meggitt is effectively implementing its design control program. The NRC inspection team identified no findings of significance.

4. Procurement/Supplier Control

a. Inspection Scope

The NRC inspection team reviewed procurement and supplier-related procedures, reviewed a sample of purchasing records, and interviewed related personnel to determine if Meggitt procurement and supplier controls were in compliance with the regulatory requirements of Criterion IV, "Procurement Document Control," and Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50. The inspectors also selected a sample of POs, associated approved supplier list entries, and other related Meggitt documents for evaluation.

b. Observations and Findings

Meggitt procedure QAP 4-001, "Procurement Control," Revision T, describes the processes and controls established to ensure that purchased items and services meet applicable technical and quality requirements. QAP 4-003, "Approved suppliers list," Revision U, and QAP 4-005, "Supplier evaluation," Revision G, detail the Meggitt procurement processes and qualification of approved suppliers. As required by these procedures, suppliers were evaluated during procurement and applicable commercial-grade surveys were performed by Meggitt. The inspectors used a sample of POs and commercial-grade surveys to verify that Meggitt's implementation of the procurement/supplier control program was being followed.

c. Conclusions

The NRC inspection team determined that Meggitt has established a program that adequately controls procurement activities, including supplier oversight, in accordance with the regulatory requirements of Criteria IV and VII of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors determined that Meggitt is effectively implementing its procurement and supplier control programs. The NRC inspection team identified no findings of significance.

4. Special Processes

a. Inspection Scope

The NRC inspection team reviewed special process control procedures, reviewed a sample of welding records, and observed in-process welding activities to determine if Meggitt's special process controls complied with the regulatory requirements of Criterion IX, "Control of Special Processes," of Appendix B to 10 CFR Part 50.

b. Observations and Findings

The NRC inspection team observed the control of special processes in accordance with Meggitt's requirements by interviewing welding personnel and observing in-process welding of Class 1E cabling conductors and connectors. The inspectors verified that the welders were using the appropriate welding procedures and individual job welding schedules (WS), were cognizant of the prerequisite setup requirements, and had established setup conditions (amperage, voltage, deposition rate, and pre-heat conditions) consistent with requirements. The inspectors verified that all measurement equipment, such as thermal measurement devices, were within current calibration schedule and capable of measuring within the required temperature range.

The team reviewed WS development procedure MP-378, "Weld Procedure Development, Approval and Control," Revision D, which applies to the preparation, qualification, release and control of weld schedules. Section 5.0, "weld procedure qualification and approval," requires preparation of a minimum of three samples for each weld that are then subject to visual examination, helium leak-rate testing (LRT), and microscopic weld penetration examination to verify adequacy of the WS. Additionally, the procedure requires all qualification test results be reviewed and approved by manufacturing engineering, quality engineering, and production management.

The NRC inspection team reviewed Meggitt's weld schedule WS-472, "Butt Weld 304L Stainless Steel," and the associated WS qualification test record, "TIG BUTT type weld on 304L Stainless Collar," dated November 23, 2010, to confirm that Meggitt personnel were adequately developing their WS. The team confirmed that three sample welds were evaluated to establish adequate penetration, and each was subjected to visual examination, helium LRT, and microscopic weld penetration examination to verify adequacy of the WS in accordance with the requirements of MP-378.

However, the NRC inspection team noted that the WS qualification test record required a weld penetration within the range of 0.020"–0.030", but the actual test value range documented in the test record was between 0.030" and 0.035". The NRC inspection team questioned this discrepancy, and further noted that both the required weld penetration range and the recorded test results were inconsistent with the design drawing for the Class 1E cable assembly, which indicated a weld penetration depth of 0.030" (Drawing 133126, "2/1 Transition Assembly," Revision B, dated August 2, 2010).

During the course of the inspection, all three samples were re-measured, and all samples had a weld penetration in excess of 0.040", which was considerably above the maximum of the required range of the WS qualification test record as well as the design drawing. The NRC inspectors discussed these observations with the vendor's technical staff and raised the potential concern that the use of a weld schedule that resulted in a weld penetration significantly greater than or less than design parameters could negatively effect the cable integrity. As a result, this could lead to the introduction of excessive heat and increasing the overall heat affected zone of the connector and internal parts, or adversely if below the minimum weld penetration requirement, could lead to a weld with inadequate integrity. In addition, the NRC inspection team noted that the WS qualification test report had not been adequately reviewed and approved by all of the required engineering disciplines, including manufacturing engineering, as required by MP-378. In response to the concerns raised by the NRC inspection team, the vendor issued CAR No. INT 13-024, dated March 21, 2013, to document the issues pertaining

to the weld penetration measurement discrepancies and lack of adequate qualification test review and approval. In addition, the vendor was requested to evaluate the extent of condition for other WS developed.

This issue is identified as Nonconformance 99901421/2013-201-03.

c. Conclusions

The NRC inspection team concluded that Meggitt has not established a program that adequately controls special processes in accordance with the regulatory requirements of Criterion III, "Design Control," and Criterion IX, "Control of Special Processes," to Appendix B to 10 CFR Part 50. The NRC inspection team issued Nonconformance 99901421/2013-201-02, to document that Meggitt did not conduct and document and adequate WS qualification test record associated with the development of a weld schedule for a Class 1E cable collar connection.

5. Inspection

a. Inspection Scope

The NRC inspection team reviewed inspection policies and procedures to determine if Meggitt's controls were in compliance with the regulatory requirements of Criterion X, "Inspection," of Appendix B to 10 CFR Part 50. In addition, the inspectors discussed the inspection program with Meggitt inspection personnel responsible for implementation, reviewed documented results of final inspections, and observed inspections performed as part of the ongoing nuclear-related fabrication activities, including receipt, in-process, and final inspections, to verify inspection program implementation.

b. Observations and Findings

Receiving

The NRC inspection team evaluated QAP 5-001, "Receiving inspection of Purchased Parts and Materials," Revision AA, which describes the process for performance of receiving activities at Meggitt, including: receipt of incoming shipments; performance of initial review of package documentation to verify the purchase was consistent with PO information; review for obvious shipping damage; and verification of the quality of the items received. The procedure also documents the process for creating the included material review report (deviations and anomalies), receiving inspection acceptance tag, and incoming inspection record.

The NRC inspection team verified (through observation) the receipt of several items, associated with WO 392986, "Cable Thermocouples," dated August 22, 2012, including: wool quartz, SiO_2 powder, stainless-steel 304L tubing, and thermocouple conductor wire material. The inspectors also reviewed a sample of incoming material and item receipt packages and verified that each contained applicable certificates of conformance from the manufacturer regarding material chemical and mechanical analysis. In addition, the team reviewed the receipt inspection material evaluation report to confirm adequate identification of test or inspection requirements in accordance with the procedure. These test or inspection requirements include review of packaging documentation, confirmation

of the PO information, review for any obvious damage, verification of the quantity received, and generation of the inspection record.

In-Process and Final Inspection

The NRC inspection team evaluated QAP 8-001, “In-process Inspection,” Revision J, which describes the various inspection activities that Meggitt personnel performed in support of the commercial nuclear product fabrication. The inspectors confirmed that the procedure included pertinent information that clearly identified and controlled the production activities at the inspection workstations, including: inspection requirements and acceptance criteria hold points, planning, sampling, in-process inspection, final inspections, rework inspection requirements, and recording.

The NRC inspection team witnessed welding of conductor leads on a Head Lift Rig ICI Cable Assembly (Item number 16-27-00630-57) performed in accordance with Router 398621, and observed welding of cable leads, reviewed the WS weld parameters, and verified setup of welding equipment and cable assembly according to weld instruction MP 358, “Splice and Connector Termination for Multi Lead Cable Assemblies,” Revision H, and design drawing 16-22-00021, “HESS & Containment MI Cable for HJTC 5 Wire.”

The NRC inspectors observed the vendor’s QA inspector evaluating completed spot welds in accordance with Inspection Instruction II-41, “Spot Welding – Instrumentation,” Revision D, and verified that the vendor’s QA inspector used appropriate inspection equipment, verified the welds in a way consistent with II-41, and affixed a QA inspection stamp to the router as required.

The NRC inspectors observed final inspection activities associated with the ICI cable assembly and confirmed that the Meggitt inspector’s qualifications, including visual acuity test results, were on file and up-to-date. The Meggitt inspector performed visual inspections to ensure that the item was free of noticeable surface imperfections, verified positive item identification markings, and checked dimensions for cable coils (length, diameter, and coil number) in accordance with reference design drawing 16-22-00021. The Meggitt inspector also reviewed the completed work router (to verify all relevant steps were completed and signed off by required quality control inspectors or the mechanical fabricators) and the completed final test data report.

c. Conclusions

The NRC inspection team determined that Meggitt has established a program that adequately controls inspection activities in accordance with the regulatory requirements of Criterion X, “Inspection,” of Appendix B to 10 CFR Part 50. Based on the limited sample of inspection activities observed and documents reviewed, the inspectors determined that Meggitt is effectively implementing its inspection program. The NRC inspection team identified no findings of significance.

6. Test Control

a. Inspection Scope

The NRC inspection team reviewed test procedures, a sample of test records, and observed in-process test activities with an emphasis on the Class 1E cables to determine if Meggitt test controls were in compliance with the regulatory requirements of Criterion XI, “Test Control,” of Appendix B to 10 CFR Part 50.

b. Observations and Findings

The NRC inspection team reviewed PO 4500441166 dated July 9, 2012, from Westinghouse Electric to Meggitt for a safety-relatedthermocouple cable. The PO invoked the quality-assurance requirements contained in Appendix B to 10 CFR Part 50 and 10 CFR Part 21. The PO also listed as a technical requirement Westinghouse Drawing # E-WEST-849-503, Revision 7, item #4, and Westinghouse Design Specification #00000-FEA-6102, Revision 8. The PO also required Meggitt to submit to Westinghouse for approval a test procedure that covers various tests, as specified by Westinghouse.

The NRC inspection team evaluated Test Program #5638, “Cable & Connector Assemblies for Westinghouse Electric Co., LLC,” dated March 3, 1995, Revision L, including electrical (insulation resistance at ambient temperature and at 385 +15/-0 degrees Fahrenheit, continuity, and capacitance) and leak-rate testing. The NRC inspectors confirmed that Meggitt personnel were using the appropriate standard test procedures, which describe the various testing activities that Meggitt personnel performed in support of the commercial nuclear product fabrication. The inspectors confirmed that the procedure clearly identifies and controls testing associated with safety-related Class 1E cable production.

The inspectors observed testing and interviewed Meggitt test personnel during functional tests associated with PO 4500451263, “Multi-lead MI cable with Litton/G&H Connector – MSSI part no. 16-22-00021-1.” The NRC inspectors confirmed that the Meggitt test personnel understood the nature of each test and could explain the expected outcomes and actions to take if results were not consistent with those outcomes.

The NRC inspectors also confirmed that the vendor’s test personnel established all testing prerequisites, including verification that the temperature of the oven was controlled, monitored, and recorded.

c. Conclusions

The NRC inspection team determined that Meggitt has established a program that adequately controls testing in accordance with the regulatory requirements of Criterion XI of Appendix B to 10 CFR Part 50. Based on the limited sample of test activities observed and documents reviewed, the inspectors determined that Meggitt is effectively implementing its test control program. The NRC inspection team identified no findings of significance.

7. Nonconformance and Corrective Action

a. Inspection Scope

The NRC inspection team reviewed nonconformance and corrective action programs, related procedures, a sample of material removal tickets (MRT) and CARs, and interviewed related QA personnel to determine whether Meggitt is in conformance with the regulatory 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 also reviewed Meggitt's process to control nonconformances and corrective actions to ensure a connection to the reporting procedures of 10 CFR Part 21, "Reporting of Defects and Noncompliance."

b. Observations and Findings

The NRC inspection team verified that Meggitt's procedures for nonconformance control include identification, segregation, documentation, disposition processes, and that they are connected to Meggitt's corrective action program. The inspectors selected a sample of MRTs and CARs available and verified that the appropriate disposition and actions were taken to resolve the issues.

c. Conclusions

The NRC inspection team determined that Meggitt has established a program that adequately controls nonconforming items and corrective actions in accordance with the regulatory requirements of Criterion XV and Criterion XVI of Appendix B to 10 CFR Part 50. Based on the limited sample of documents reviewed, the inspectors determined that Meggitt is effectively implementing its nonconformance and corrective actions programs. The NRC inspection team identified no findings of significance.

8. Measuring and Test Equipment

a. Inspection Scope

The NRC inspection team reviewed measuring and test equipment (M&TE) policies and procedures to determine if Meggitt's controls were in compliance with the regulatory requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. In addition, the inspectors verified the implementation of M&TE control through direct observation of inspection activities of Meggitt personnel and review of certificates of calibration for a sample of M&TE.

b. Observations and Findings

The NRC inspection team evaluated a sample of M&TE and related documentation, including performance of testing related to PO 4500451263, "Multi-lead MI cable with Litton/G&H Connector – MSSI part no. 16-22-00021-1," and confirmed that the vendor used calibrated equipment for testing in accordance with Meggitt's "Acceptance Test Data Sheet MSSI part number 16-22-00021-1 PO 4500451263." The inspectors confirmed that the instruments were calibrated and appropriate for the range of operation for each inspection activity.

The inspectors evaluated Meggitt's calibration frequency for common items and discussed the basis for the calibration frequency with Meggitt personnel. The inspectors confirmed that the calibration frequency was based on standards recommended by the original equipment manufacturer, operational experience, and frequency of use.

Additionally, Meggitt's supplier calibration services oversight process was evaluated. Specifically, the inspectors reviewed calibration laboratory accreditation documentation and confirmed that the accreditation covered the ranges of parametric values for which these devices were used during testing. The inspectors confirmed traceability to National Institute of Standards and Technology calibration standards and that all test and inspection equipment used for the observed inspection and test activities were controlled, documented, and current for calibration requirements.

c. Conclusions

The NRC inspection team determined that Meggitt has established a program that adequately controls calibration and use of M&TE in accordance with the regulatory requirements of Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50. Based on the limited sample of calibration and measurement activities observed and documents reviewed, the inspectors determined that Meggitt is effectively implementing its M&TE program. The NRC inspection team identified no findings of significance.

9. Entrance and Exit Meetings

On March 18, 2013, the inspectors presented the inspection scope during an entrance meeting with Mr. Gene Griffis, QA Manager, and other Meggitt personnel. On March 21, 2013, the inspectors presented the inspection results during an exit meeting with Mr. Gene Griffis, QA Manager, and other Meggitt personnel.

1. PERSONS CONTACTED AND NRC STAFF INVOLVED:

Name	Position	Affiliation	Entrance	Exit
A. Beltran	Mechanical Assembler	Meggitt		
M. Alesna	QA Inspector Senior	Meggitt		
J. Lopez Jr.	QA Supervisor	Meggitt		
T. Reagan	Mechanical Inspector IV	Meggitt		
G. Griffis	QA Manager	Meggitt	X	X
C. Barnes	Quality Engineer	Meggitt	X	X
B. Battin	Test Tech Specialist	Meggitt		
L. Torres	Production	Meggitt	X	X
A. Neminov	Project Engineer	Meggitt		X
A. Luterstein	Director of Engineering	Meggitt	X	X
M. Shaffarian	Director of Operations	Meggitt		X
R. Sanchez	Factory Manager	Meggitt		X
S. Welch	Contracts Administration	Meggitt	X	
I. Hamzeh	Engineering	Meggitt	X	
J. Fuller	Nuclear Production Manager	Meggitt	X	
D. Cox	Contracts Manager	Meggitt	X	
J. Low	Engineering Manager	Meggitt	X	
Greg Galletti	NRC Inspector	NRC	X	X
Jeffrey Jacobson	NRC Inspector	NRC	X	X
Eugene Huang	NRC Inspector	NRC	X	X

2. INSPECTION PROCEDURES USED:

IP 36100,"Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance"

IP 43002, "Routine Inspections of Nuclear Vendors"

IP 43004, "Inspection of Commercial-Grade Dedication Programs"

3. ITEMS OPENED, CLOSED, AND DISCUSSED:

Item Number	Status	Type	Description
99901421/2013-201-01	Opened	NOV	10 CFR Part 21
99901421/2013-201-02	Opened	NON	App. B, Criteria III & V
99901421/2013-201-03	Opened	NON	App. B, Criteria V & IX

4. DOCUMENTS REVIEWED

Design Specifications

Westinghouse 00000-FEA-6102, “Design and Fabrication Specification for Mineral Insulated Cable Assemblies without Integral Reference Junctions,” Revision 08

Drawings

Drawing 16-22-00021, “HESS & Containment MI Cable for HJTC 5 Wire”
Drawing 16-27-00630, “MI Cable Head Lift Rig ICI,” Revision C
Drawing 114D164, “Detection Chamber Assembly H2/O2 (Safety),” Revision C
Drawing 101D012, “Sensor Hydrogen Assembly,” Revision C
Drawing 101B009, “Current Collector Assembly Containment Hydrogen Sensor,” Revision E
Westinghouse drawing E-1470-65-102, “ICI Mineral Insulated HJTC Cable Assembly,” Revision 4
Westinghouse drawing E-1370-165-510, “Head Lift Rig ICI Flexible MI Cable Assembly,” Revision 0, 1-2
Westinghouse drawing E-1370-165-510, “Head Lift Rig ICI Flexible MI Cable Assembly,” Revision 0, 2-2

Nonconformance and Corrective Action Reports

Material removal ticket (MRT) #42322, dated March 11, 2013
MRT #64002, dated February 1, 2013
MRT #42202, dated July 25, 2012
MRT #40743, dated June 27, 2012
MRT #39353, dated September 9, 2010
MRT #38135, dated August 5, 2010
MRT #39262, dated September 13, 2011
MRT #39286, dated October 5, 2011
MRT #41133, dated March 14, 2013

Corrective action report (CAR) 13-007, dated February 14, 2013
CAR 12-003, dated February 9, 2012
CAR 12-004, dated February 9, 2012
CAR 12-048, dated December 11, 2012
CAR 12-050, dated December 14, 2012
CAR 10-024, dated September 28, 2010

Procedures

MP-358, “Splice and Connector Termination for Multi Lead Cable Assemblies,” Revision H
MP--900916, “Silica Powder,” Revision B
MP-378, “Weld Procedure Development, Approval and Control,” Revision D
Standard Operating Requirements 101, Revision 5, dated January 20, 2009
Standard Test Procedure STP-2189, “Standard Helium Leak for Cable/Connector Assemblies,” Revision F

Standard Test Procedure STP-2190, “Standard Insulation Resistance Procedure for Cable/Connector Assemblies,” Revision F
Standard Test Procedure STP-2191, “Standard Helium Leak For Cable/Connector Assemblies,” Revision F
Standard Test Procedure STP-2207, “Standard Continuity and Isolations,” Revision F
Standard Test Procedure STP-4745, “Standard Capacitance test procedure for Cable/Connector Assemblies,” Revision F

Purchase Orders

PO #60221 from JPS Composite Materials Corporation to Meggitt, January 24, 2011
PO #60560 from Dorsett & Jackson, Inc., to Meggitt, dated August 24, 2011
PO #22980 from NSL Central Testing, LLC, to Meggitt, dated January 25, 2013
PO #1012067430 to AREVA NP, Inc., dated September 11, 2012
PO #5050341176 to GE Reuter-Stokes 1, dated May 18, 2012
PO #4500682048 to PSEG, dated February 16, 2012

Quality Assurance Program Documents

QAP 6-001, “Nonconforming material forms,” Revision Y
QAP 4-004, “Supplier Corrective Action Request,” Revision H
QAP 6-009, “10CFR21 Reporting Procedure,” Revision G
QAP 6-008, “Corrective Action Procedure – General,” Revision O
QAP 4-001, “Procurement control,” Revision T
QAP 4-003, “Approved suppliers list (ASL),” Revision U
QAP 4-005, “Supplier evaluation,” Revision G
QAP 6-004, “Material Review Board (MRB),” Revision S
QAP 6-006, “Nonconforming material & corrective action,” Revision M
QAP 6-011, “Stop work procedure,” Revision B
QAP 6-013, “Customer corrective action requests,” Revision A

Supplier Surveys

Commercial-grade survey report-1012-002, NSL Analytical Services Inc., dated November 9, 2012
Survey of JPS Composite Materials Corporation dated August 19, 2008
Survey of JPS Composite Materials Corporation dated February 6, 2010

Test Reports

Test Report #249568, “SiO2 mix 2/4/13,” NSL Analytical Services, Inc.
Test Report #240616, “SiO2 mix 7/9/12,” NSL Analytical Services, Inc.
Weld Procedure Qualification Test Record dated November 23, 2010

Weld Schedules

Weld Schedule 472, “Orbital Welder,” Revision A, dated December 13, 2010
Weld Schedule 072, “Weld Schedule for Pulse-arch 50 Welder,” dated June 29, 1989

Work Orders

Work Order 315003, “Cable Thermocouple,” dated October 4, 2007
Work Order 399165, “Hess & Containment MI Cable,” dated February 27, 2013
Work Order 366922, “Hydrogen Sensor Assembly,” dated February 22, 2011

5. ACRONYMS USED:

ASL	approved suppliers list
CAR	corrective action request
CEVB	Chief, Electrical Vendor Branch
CFR	*Code of Federal Regulations*
CGD	commercial-grade dedication
CGI	commercial grade item
CMVB	Chief, Mechanical Vendor Branch
COC	certificate of conformance
DCIP	Division of Construction Inspection and Operational Programs
IEEE	Institute of Electrical and Electronics Engineers
IP	inspection procedure
LRT	leak-rate testing
Meggitt	Meggitt Safety Systems, Inc.
MRT	material removal tickets
M&TE	measuring and test equipment
NCR	nonconformance report
NON	Notice of Nonconformance
NOV	Notice of Violation
NRC	(U.S.) Nuclear Regulatory Commission
NRO	Office of New Reactors
OEM	original equipment manufacturer
PO	purchase order
QA	quality assurance
QAP	quality assurance procedure
U.S.	United States (of America)
WS	weld schedule