



MIRION
TECHNOLOGIES

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Fax: 301-816-5151, NRC Operations Center

DATE: September 23, 2013

U.S. Nuclear Regulatory Commission
NRC Document Control Desk
Washington, DC 20555-0001

SUBJECT: INTERIM REPORT UPDATE
For component ASME Material supplied by
Mirion Technologies (Conax Nuclear), Inc. (MTCN), as part of
Containment Electric Penetration Assemblies (EPA)

Reference: MTCN Initial Notification & Interim Report Letter dated August 23, 2013
U.S. NRC Event Number 49301

Gentlemen/Ladies:

The purpose of this letter is to provide an updated Interim Report (see Attachment "A") to the Nuclear Regulatory Commission regarding a potential defect of materials supplied to operating US nuclear power plants by Mirion Technologies (Conax Nuclear), Inc. (MTCN) with Containment Electric Penetration Assemblies (EPA).

Initial notification was submitted August 23, 2013.

Should you have any questions regarding this information or other issues, please contact us at your convenience.

Mirion Technologies (Conax Nuclear), Inc.

By: John D. MacDonald
John D. MacDonald, Director of Operations

Cc: Mirion: I. Wilson, CEO; President, Sensing Systems Division
Mirion: P. E. Couchman, Quality Engineer
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September 23, 2013

**Mirion Technologies (Conax Nuclear) Inc., 10CFR21 Interim Report
Attachment "A"**

I. **Reporting Individual (NB: no change from previous report):**

J. D. MacDonald, Director of Operations
Mirion Technologies (Conax Nuclear) Inc.
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II. **Identification of Basic Components supplied which have a potential defect (NB: no change from previous report):**

- a. The following materials supplied with the Electric Penetration Assemblies (EPAs):
 - i. Headerplates
 - ii. Mounting weldment rings
- b. Flanges:
 - i. Weld-neck flanges for mounting of EPA

III. **Identification of the firm supplying the Basic Component (NB: no change from previous report):**

Mirion Technologies (Conax Nuclear) Inc.
402 Sonwil Drive
Buffalo, NY 14225-5530

IV. **Nature of Potential Defect (Updated from previous report):**

MTCN's initial Notification reported that material supplied to MTCN by approved sub-suppliers audited to NCA-3800 by MTCN was considered to be ASME qualified source material for Section II and Section III requirements. During triennial Survey of MTCN by the ASME for renewal of our N Type Certificates of Authorization, it was identified by the ASME Survey team that material supplied by two (2) MTCN approved sub-suppliers should be considered unqualified source material. At that time, MTCN's Quality Program did not include the use of unqualified source material.

Since MTCN's initial Notification, we now provide the following update:

1. After investigation, MTCN has verified that only Crystal River NPP was supplied with EPA with mounting weldment rings, at present (see Status update)
2. Through material testing by an independent laboratory, MTCN has determined the EPA headerplate ASME SA-240 material supplied by MTCN to U.S. plants **does not impact material safety or performance** of the EPAs delivered:



- Traceability of material samples was verified for the EPA headerplate materials supplied.
 - Compliance to ASME SA-240 material requirements has been verified by testing of the material properties of samples.
 - **Chemical and mechanical re-verification test results to date indicate there have been no test failures compared to the ASME SA-240 material requirements, indicating the materials are not defective:**
 - Chemistry test results meet the requirements for ASME SA-240 material.
 - Mechanical test results exceed the minimum requirements for SA-240 material:
 - tensile strength
 - yield strength
 - elongation
 - Material is below the maximum hardness for ASME SA-240 material.
 - Material passed the Inter-granular Stress Corrosion Cracking testing in accordance with ASTM A-262-13, Practice E.
3. The Weld-Neck-Flanges, supplied one US plant, are considered as part of the Code Pressure boundary. The Weld-Neck-Flanges do not require Authorized Nuclear Inspector Surveillance, or Code designator. All flanges received were verified to ASTM/ASME S/A-105 and ASTM/ASME S/A-350, LF2, as applicable, including the material chemical verification by MTCN.

By analysis, the ASTM/ASME S/A-105 and ASTM/ASME S/A-350, LF2, Weld Neck Flanges have significant margin in design. No design issues exist with the Weld Neck Flanges, requiring material to ASME Section II SA-105 and SA-350, LF2.

V. Date the potential defect was discovered (NB: no change from previous report):

June 20, 2013

VI. Number and location of basic components in use at, supplied for, being supplied for, manufactured or being manufactured for facilities subject to the regulations in this part (Updated from previous report):

Reflecting the results of MTCN investigation as of **September 20, 2013**, an updated table is presented as follows:

Basic Components supplied			
Plant Name	No.	Basic Component	Use Status as of September 20, 2013
Oconee	23	Weld-Neck Flanges	18 scrapped, 5 in plant stock, placed on HOLD.
Ginna	1	EPA (limited materials)	Installed, 2009. Included in 2011 IRLT.
Crystal River	2	EPA (limited materials)	Not installed. Plant closing. On HOLD



Point Beach	2	EPA (limited materials)	Not installed, <i>To be confirmed</i>
Monticello	1	EPA (limited materials)	Installed in 2011.
D. C. Cook	1	EPA (limited materials)	Installed, <i>To be confirmed</i>
Turkey Point	3	EPA (limited materials)	Not installed. Placed on HOLD
Basic Components being manufactured			
Materials on-hand for Basic Components being manufactured were identified and segregated.			

VII. Corrective action taken, being taken, or will be taken, and the name of the organization responsible for the action (Updated from previous report):

Mirion Technologies (Conax Nuclear), Inc. is the organization responsible for the corrective actions.

Actions taken, being taken, or will be taken to the extent known at this time:

- a. MTCN has reviewed all purchases of all other ASME Code materials and verified all such supply has been from ASME Quality System Certificate (QSC) Holders. The scope of this Notification is confirmed to be limited to the materials identified in Section II above.
- b. Subject materials of Section II above were supplied with Certified Material Test Reports (CMTRs), which were reviewed at receipt to meet the ASME Code requirements for the material.
- c. When materials were received, the chemistry of the material was re-verified by MTCN testing to the ASME Code material requirements.
- d. Upon notification of the potential non-compliance, all coupons for the materials involved in Section II above have undergone independent testing by an MTCN Approved Supplier test lab for re-verification of the mechanical properties of ASME Code materials.

Based on the testing results, the EPA headerplate ASME SA-240 material supplied by MTCN to U.S. plants **does not impact material safety or performance** of the EPAs delivered.

- i. Traceability of material samples was verified for the EPA headerplate materials supplied.
- ii. Compliance to ASME SA-240 material requirements has been verified by testing of the material properties of samples.
- iii. **Chemical and mechanical re-verification test results to date indicate there have been no test failures compared to the ASME SA-240 material requirements, indicating the materials are not defective:**



- Chemistry test results meet the requirements for ASME SA-240 material.
- Mechanical test results exceed the minimum requirements for SA-240 material:
 - tensile strength
 - yield strength
 - elongation
- Material is below the maximum hardness for ASME SA-240 material.
- Material passed the Inter-granular Stress Corrosion Cracking testing in accordance with ASTM A-262-13, Practice E.

As noted above, testing has verified the EPA material supplied does not impact material safety or performance of the EPAs delivered.

MTCN plans to revise the paperwork of the EPA with the supplied Material, subject to renewal of our ASME Certificates of Authorization and approval by the ASME Committee of Conformity Acceptance of our use of Unqualified Source Material. Resolution with the ASME is expected in November, 2013.

VIII. **Advice related to the potential defect about the basic component that has been, is being or will be given to the purchasers or licensee (Updated from previous report):**

Customers noted above have been notified of the potential defect and were requested to supply MTCN with usage status (i.e., whether components are installed, destroyed or in stock). To date, all but 2 plants, noted in the table above, have supplied MTCN with usage status. MTCN will follow-up with the 2 remaining plants (D. C. Cook and Point Beach) to obtain their usage information.

Given the testing results have verified the EPA material supplied does not impact material safety or performance of the EPAs delivered and meets all SA-240 material specification requirements. No additional testing is planned.

As noted above, MTCN plans to revise the paperwork of the EPA with the supplied Material, subject to renewal of our ASME Certificates of Authorization and approval by the ASME Committee of Conformity Acceptance of our use of Unqualified Source Material. Resolution with the ASME is expected in November, 2013.