

OE-2: 2022-01

April 2022

Falsified Test Results for Components that have Potential Safety Implications

PURPOSE

This Operating Experience Level 2 (OE-2)¹ document provides actions to be completed by the Department of Energy (DOE), to include the National Nuclear Security Administration (NNSA). These actions consist of locating, evaluating, and reporting components that may have been procured for use at DOE Federal and contractor sites from Bradken, Inc.²

BACKGROUND

According to the court filings, Bradken, Inc. produced castings that failed lab tests and did not meet United States (U.S.) Navy (Navy) standards. On June 15, 2020, the Department of Justice announced that the former Director of Metallurgy of Bradken, Inc.'s Tacoma Foundry was being charged criminally for falsifying test results and had potentially provided substandard steel components used in naval submarines for up to 30 years.³

On February 14, 2022, the former director was sentenced to 30 months in prison and was charged a \$50,000 fine for defrauding the U.S. by falsifying test results in over 240 productions of steel for the Navy. These productions represented about half of the castings that were purchased for the Navy's use. Court filings indicated that Bradken's senior management team was unaware of the fraud until May 2017. At that time, a lab employee discovered that test cards had been altered and that other discrepancies existed in Bradken's records. In June 2020, Bradken entered into a deferred prosecution agreement, accepting responsibility for the offense, and agreeing to take remedial measures. Bradken also entered into a civil settlement, paying \$10,896,924 to resolve allegations that the Foundry

produced and sold substandard steel components for installation on U.S. Navy submarines.⁴

Below is a brief history and timeline of ownership to aid in potential searches of components purchased from Bradken, Inc. (additional information is provided in Attachment 1):

- Prior to 2007- Atlas Castings and Technology
- 2007 to August 2008 - AmeriCast Technologies
- 2008 to 2020 Bradken, Inc (Subsidiary of Hitachi Construction Machinery)
- 2020 to current (Bradken, Ltd.)

REASON FOR CONCERN

Bradken, Inc. produces raw materials and components, such as specialized castings and other custom components for critical pressure safety systems, which may be used in the nuclear industry and may be identified by the name "Bradken", "Atlas", or "AmeriCast" as casted on the component (or if a valve, on the valve body). Components of concern may be currently in use at DOE sites that have or use American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA) requirements in these critical pressure systems. For instance, Bradken, Inc. is one of very few domestic companies that are ASME Material Organization certified to provide raw cast materials and components to the nuclear industry (of which components may be machined, assembled, and sold through various other ASME or ASME NQA-1 approved manufacturers and distributors) and is currently the **only approved** manufacturer of steel castings in the U.S. listed on Lloyds Register for 2019. Lloyds Register is typically used by European and many

¹ DOE O 210.2A, DOE Corporate Operating Experience Program (Reference Appendix A)

² When referencing "Bradken Inc." within this document it is specifically in reference to the Tacoma Foundry in Tacoma, WA (USA).

³ [Former metallurgist lab director pleads guilty to major fraud on USA- Dept of Justice November 8, 2021](#)

⁴ [Bradken Inc. Pays \\$10.8 Million to Resolve False Claims Act Allegations Involving Substandard Naval Parts- Dept of Justice June 16, 2020](#)

U.S. companies for the intent to aid in identifying and verifying if a manufacturer is capable of providing satisfactory products through effective processes, production, and inspections.⁵

Additionally, it is important to note that some of the tests found to have been falsified included destructive tests such as the Charpy V-Notch or impact tests. Charpy V-Notch is a test of a materials toughness such as the materials brittleness or ductileness. This may be very important when determining if a material may be more prone to breakage during specific uses such as use during extreme low temperatures, high impact, or extreme wear environments. Due to the type of tests falsified, it is probable that the out of tolerance mechanical tests would not have been identified during routine inspections.

ACTIONS

DOE/NNSA sites are requested to complete the following actions within 90-days. Further clarification is provided in the attachment, Frequently Asked Questions (FAQs), which will aid sites in completing the actions listed below:

- 1) Evaluate if components were procured from Bradken, Inc. between 2008 to 2020. Other previous names may have been used by Bradken, Inc. such as AmeriCast or Atlas. Additionally, Bradken sold through various distributors and may not have sold directly to DOE sites.
 - a. Prioritize the evaluation of components located in Safety Class (SC), Safety Significant (SS) Structure, System, or Component (SSC) (e.g., nuclear facility related) and any critical components in any application whose failure could result in a loss of safety function or present a hazard to public or worker health and safety (e.g., items not in a nuclear facility but critical to safety, health, or the environment).
- 2) Provide the appropriate response to your respective Program Secretarial Office (PSO) with one of the following:
 - a. *(Insert site name here) **has not** procured any products from Bradken, Inc. (or other previously known name such as*

AmeriCast or Atlas or a distributor of their products) between 2008 and 2020.

Or

- b. *(Insert site name here) **has** procured products from Bradken, Inc. (or other previously known name such as AmeriCast or Atlas or a distributor of their products) between 2008 and 2020 and will be evaluating the items for safety implications.*

Additional reporting of suspect and counterfeit items (S/CI) is required. S/CI reporting requirements are stated in DOE O 414.1D, *Quality Assurance, Attachment 3, Suspect/Counterfeit Items Prevention* and implemented via site internal processes and procedures. Specifically, reporting is required for:

- DOE Office of Inspector General (OIG) Forward final reports for HQ OIG to counterfeit@hq.doe.gov.
- DOE Occurrence Reporting and Processing System (ORPS) in accordance with [DOE O 232.2A](#), *Occurrence Reporting and Processing of Operations Information*.
- DOE OPEXShare in accordance with [DOE O 210.2A](#), *DOE Corporate Operating Experience Program*

Some DOE Contractors may also have Federal Acquisition Regulation (FAR) 52.246-26, Reporting Nonconforming Items in their contracts. This requires the reporting of certain critical and major nonconformances, as well as S/CI, to the Government-Industry Data Exchange Program (GIDEP).

NOTE: The period of 2008 to 2020 was provided to aid in prioritization since the scope of the search is so broad. If items are identified outside of the specified time-period and/or after the 90-day timeframe, they should also be evaluated for potential safety implications and reported as appropriate. Items should be reported in accordance with DOE Order and/or FAR requirements at the time they are identified as S/CI.

⁵ Lloyds Register List of Approved Manufacturers
https://www.cdinfo.lr.org/information/Documents/Approvals/ApprovedManufactures/Approved_Manufacturer.pdf

SCHEDULE

Due to the potential significance of this issue, prompt attention to this matter is warranted and the Office of Environment, Health, Safety and Security (EHSS) recommends the "Actions" be completed as soon as possible, within 90 days of issuance of this OE-2. If Bradken-related S/CIs are found during routine maintenance, management assessment (walk-thru), or inspections after a response of "has not procured" was already sent to your PSO, an updated response is at the discretion of your PSO. However, please continue to report these items as promptly as possible using the appropriate mechanisms as required.

REFERENCES

ASME Certificate Holder Search webpage:
https://caconnect.asme.org/directory/?_ga=2.41871146.988460137.1648042775-751220189.1639515056

Bradken Webpage: <https://bradken.com/products-and-services/power-generation>

[DOE O 210.2A, DOE Corporate Operating Experience Program](#)

[DOE O 232.2A Chg1 \(MinChg\), Occurrence Reporting and Processing of Operations Information.](#)

[DOE O 414.1D, Quality Assurance](#)

Department of Justice, United States Attorneys Office
 Western District of Washington, Press Release:

[Bradken Inc. pays \\$10.8 million to settle False Claims Act allegations and enters into deferred prosecution agreement](#), June 15, 2020.

Department of Justice, United States Attorneys Office
 Western District of Washington, Press Release:
[Former metallurgist lab director pleads guilty to major fraud on USA.](#), November 8, 2021.

Lloyds Register Group Limited, [List 2 Approved Manufacturers of Steel Castings.](#)

[Lloyds Register List of Approved Manufacturers](#)
 United States v. Thomas

INFORMATION CONTACTS:

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ATTACHMENT: FAQs

- 1) Why are the previous owners/companies of Bradken listed in this OE-2 and why is it relevant to sites search? Do all three companies continue to sell parts?
 - a. The companies (Atlas, AmeriCast) are also listed because the fraud occurred for approximately 30 years which could potentially include products from these companies. Materials with certifications or even cast materials with these company names could have been sold during the timeframe of interest stated in the “Action” section.
 - b. Although these companies (Atlas and AmeriCast) are no longer in existence (because they were acquired by Bradken), their materials were primarily sold through distributors. This means that the materials may be in stock at these distributors for unknown amounts of time before use or sale (i.e., machined, fabricated, assembled) and then sent to a customer. In essence, the materials such as valve bodies may have casting marks on them from any of the three companies but may have been sold during the timeframe of interest that is listed in the “Action” section.
- 2) How likely is it that Bradken materials may have been used throughout DOE?
 - a. There is a high likelihood that materials were used at DOE. This company is of concern because they are one of very few foundries domestically in the U.S. that produce materials used commonly in the nuclear industry. It is also important to note that materials are not typically bought directly from Bradken, they may also be sold through distributors such as those potentially certified to NQA-1 standards.
- 3) How can a site determine which distributors may have been used?
 - a. The [ASME Certificate Holder Search Website](#)⁶ may be utilized by sites to aid in narrowing down the search for potential distributors that are certified to sell materials for use in nuclear versus non-nuclear environments. This may aid in prioritizing the search for materials which are currently in use in more critical areas. This allows response within the timeframe allotted in accordance with the reporting addressed in the “Action” section.
- 4) Which products are affected? How might a site narrow this search?
 - a. Bradken manufactures custom components, so there is a potential that many products could be affected. Additional information is available on the [Bradken webpage](#)⁷.
 - b. When looking specifically at the products that are made for the energy sector, Bradken primarily makes the following items:
 - i. pumps (casings, cooling, and pressure)
 - ii. valves (high pressure, safety-relief, & nuclear)
 - iii. pipe connectors & couplers
 - iv. steam turbine components (small steam turbines, high-pressure steam turbine cases, steam chests)
 - v. hydroelectric components (runners, wicket gates, pelton wheels, crowns, bands, blades)
 - vi. compressors (includes cases & nozzles)
 - vii. heat exchangers
 - viii. structural components used on naval ships (beams, hatches, ports, steering systems, propulsion systems, and generators)

⁶ ASME Certificate Holder Search Website: https://caconnect.asme.org/directory/?_ga=2.41871146.988460137.1648042775-751220189.1639515056

⁷ Bradken Webpage: <https://bradken.com/products-and-services/power-generation>

ATTACHMENT: FAQs CONTINUED

- 5) Is this company debarred or prohibited from use by DOE or DOE contractors?
- a. No, this company is not debarred and there is no prohibition in place that prevents sites from procuring from them, currently.
 - b. In addition to the civil settlement, which was completed in 2020, the Western District of Washington [announced](#)⁸ that the United States has filed a criminal charge against Bradken for committing the crime of major fraud against the United States. The United States and Bradken have also entered into a Deferred Prosecution Agreement (DPA) in which Bradken admitted the government's allegations and agreed to take certain remedial actions. If Bradken complies with all of the DPA's requirements, the government will dismiss the criminal charge after three years. (Department of Justice, June 2020)

⁸ Bradken Inc. Pays \$10.8 Million to Resolve False Claims Act Allegations Involving Substandard Naval Parts <https://www.justice.gov/opa/pr/bradken-inc-pays-108-million-resolve-false-claims-act-allegations-involving-substandard-naval>