

Comments on the EPRI Report 3002002276, “Plant Support Engineering: Counterfeit and Fraudulent Items - Mitigating the Increasing Risk”

1. The EPRI guidance document provides necessary fundamental elements for developing a CFSI program appropriate for implementing detecting and preventing CFSI from entering NRC regulated activities. Once in place, such a program should include provisions for continuous improvement based on emerging industry experiences and lessons learned.
2. The EPRI guidance document could be enhanced by referring to those NRC regulations addressing activities associated with minimizing the introduction of CFSI into NRC regulated activities. It should be noted that while the examples given below pertain to power reactors, similar requirements are contained in regulations of other activities under NRC purview.
 - a. Quality assurance programs (10 CFR Part 50, Appendix B)
 - b. Commercial grade dedication (10 CFR Part 21)
 - c. Reporting of defects and nonconformance (10 CFR Part 21)
 - d. Supply chain techniques associated with Critical Digital Assets (CDAs) (10 CFR 73.54)
 - e. Deliberate Misconduct (10 CFR 50.5 and comparable provisions in other parts of 10 CFR Chapter I)
 - f. Completeness and accuracy of information (10 CFR 50.9 and comparable provisions in other parts of 10 CFR Chapter I).
3. Certain information contained within the EPRI guidance document is outside of the NRC’s regulatory authority and the staff is not commenting on these sections (e.g. Chapter 3, “Historical Issues and The Industry’s Response”, A, Addendum B, “Standard CFI Procurement Clauses”, Standard Procurement Clause in NP-6629, cost vs. commitment, etc.).
4. The EPRI guidance document does not appear to provide guidance to licensees and suppliers of Critical Digital Assets (CDAs) to evaluate and manage the risks of introducing CFSI into NRC regulated facilities via the supply chain in accordance with 10 CFR 73.54, Protection of digital computer and communication systems and networks, and NRC Regulatory Guide 5.71, Cyber Security Program for Nuclear Facilities, section C.12.2, Supply Chain Protection.
5. The EPRI guidance document addresses safety related systems, structures and components (SSCs) as evidenced by references to specific Criteria in 10 CFR Part 50, Appendix B, but is silent on how CFSI will be addressed for SSCs subject to other NRC regulations and requirements, e.g., important to safety SSCs, SSCs of high risk significance under 10 CFR 50.69, SSCs which are subject to Regulatory Treatment of Non-safety Systems (RTNSS), and SSCs needed to address “beyond design basis accidents” such as Station Blackout (SBO). Similar requirements, e.g., 10 CFR 40.53, 71.31, and 72.140, exist in the regulations of other activities under NRC purview.

6. The EPRI guidance document needs guidance for accessing the NRC's existing Allegations program when an item is suspected of, or confirmed to be fraudulently misrepresented is discovered, and the validity of which has not been established.
7. The guidance presented in section titled "Control of counterfeit and fraudulent items" is unclear on several issues, specifically:
 - a. Actions to take in the event CFSI is discovered installed in an operating unit
 - b. A discussion concerning roles and responsibilities under the NRC Deliberate Misconduct regulations (e.g., 10CFR 50.5, or similar requirements contained in the 10 CFR for fuel fabrication facilities, certificate holders, and material licensees) when a CFSI is encountered would be appropriate. NRC regulations consider such items to be potential evidence in Deliberate Misconduct investigations, which could extend to non-safety related components as well as safety related, and to suppliers as well as licensees (ref. 63 FR 1892, 63 FR 1893, 56 FR 40670)
 - c. The section uses ambiguous statements such as, "CFSI should be correctly investigated and dispositioned," "making appropriate notifications," and "notifying authorities when appropriate." Without further explanation as to what is expected, the EPRI guidance document appears to be lacking in specificity and direction to ensure compliance with NRC regulations.
 - d. It is unclear under which conditions industry considers it appropriate to contact the OEM and when to contact the supplier or distributor. An incorrect decision could jeopardize an ensuing investigation of Deliberate Misconduct.
 - e. The Deliberate Misconduct section should provide more emphasis on meeting the NRC regulatory requirements for Deliberate Misconduct, such as:
 - i. Passing down regulatory requirements associated with Deliberate Misconduct to sub-tier suppliers,
 - ii. Defining the roles, responsibilities and expectations between the licensee and supplier as they pertain to counterfeit, fraudulent, and suspect items (CFSI).
 - iii. Using the NRC Allegations process to emphasize that employees have a means to engage the NRC in situations of suspected wrongdoing related to NRC regulated activities. The validity of which activity need not be established.

Note: NRC regulations consider items suspected of being fraudulently misrepresented as possible evidence in Deliberate Misconduct investigations. These investigations may extend to non-safety related components as well as safety related, and to suppliers as well as licensees (ref. 63 FR 1892, 63 FR 1893, 56 FR 40670). Additional information regarding "deliberate misconduct," "willfulness," "careless disregard," and "negligence" can be found in the NRC's Enforcement Manual (ML102630150).

- f. In the section titled “Notify Appropriate Law Enforcement,” a statement is made that says “... while notification of the discovery of a small quantity of items will not result in a full scale investigation.” To be accurate the sentence should be read “... may not result in a full scale investigation,”
 - g. The guidance cites a cost justification as a possible reason for not invoking duties and responsibilities in accordance with 10 CFR 50.5, Deliberate Misconduct. It is unclear why this stipulation is presented since such a threshold does not exist in NRC regulations.
8. The EPRI guidance document cites several instances of counterfeit, fraudulent items as examples of “actual Operating Experience” both within the nuclear power industry and outside. However, it does not present lessons learned from these incidents, or what actions industry will take to prevent similar occurrences. Cited examples lacking specific guidance for effective implementation include: IN 2013-15, “Willful Misconduct/Record Falsification and Nuclear Safety Culture, the U.S. Department of Commerce’s study of counterfeit electronics, fraudulent laboratory certification and test report documents evidenced in South Korea and the detection of fraudulent American Welding Society (AWS) certifications.
 9. The EPRI guidance document does not provide guidance as to which fastener “head marking list” will be recognized by the industry as the basis for verifying that a particular fastener is compliant with the Fastener Quality Act (<http://www.uspto.gov/trademarks/law/fastener/>).

NOTE: Almost every fastener supplier and/or manufacturer appears to publish their own version of a head marking list so consequently there are many “unofficial” lists available.

10. The EPRI guidance document introduces terms not previously defined or used in NRC regulations. While some of these terms are defined in the EPRI guidance document, their definitions are not clear, nor is it clear how these terms may relate to NRC-defined terms. Other terms used are not defined in the EPRI guidance document. Examples of these issues include:
 - a. The definition of “counterfeit” is presented with two separate paragraphs with no linkage between them, making it unclear if both paragraphs have to be satisfied to be within the definition, or are they are separate elements. If the need to define the term is essential to an understanding of how such items could potentially impact the NRC’s stated mission, then the definitions of these terms must reflect the risk using such items would have to NRC regulated activities (e.g. the ability of the item to perform it’s intended safety function consistent with the quality requirements of Appendix B of 10 CFR 50, or similar requirements contained in 10 CFR for fuel fabrication facilities, certificate holders, and material licensees).
 - b. The definition of “fraudulent” is presented without an explanation as to how fraudulent differs from, or relates to “counterfeit.” The definition also does not include refurbished items being sold as new, which could present a safety problem.

- c. The term, “authorized distributor,” is used but not defined. Therefore, it is unclear who authorizes distribution, or the activities the “authorized distributors” are authorized to perform. Is an “authorized distributor” the same as being an OEM “authorized” distributor?
- d. The phrase, “enhanced qualification of suppliers,” is used, but it is unclear if the justification and conclusions are documented, and whether re-qualification is needed. If re-qualification is needed, then how often should it be performed?
- e. The phrase, “familiar with authentication technologies,” is used. However, it is unclear if this means that the entities and individuals to which this particular guidance is addressed are simply expected to know what “authentication technologies” are, or if some level of proficiency in these technologies is expected.
- f. The term “overt” is used but not defined.
- g. The term “semi-overt” is used but not defined.
- h. The term “covert” is used but not defined.