March 8, 2013

MEMORANDUM TO: Timothy Frye, Chief
Construction Assessment & Enforcement, Branch
Division of Construction Inspection
and Operational Programs
Office of New Reactors

FROM: Daniel Pasquale, Senior Reactor Operations Engineer **/RA/**
Construction Assessment & Enforcement Branch
Division of Construction Inspection
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Office of New Reactors

SUBJECT: SUMMARY OF CATEGORY 3 PUBLIC MEETING: DISCUSSIONS ON ACTIVITIES RELATED TO THE COUNTERFEIT, FRAUDULENT, SUSPECT ITEM (CFSI) PROGRAM

On February 13, 2013, the U.S. Nuclear Regulatory Commission (NRC) held a meeting at the U.S. Nuclear Regulatory Commission, One White Flint North Commission Hearing Room (11555 Rockville Pike, Rockville, Maryland, 20852) with representatives of the industry present (refer to Attachment 2: Attendance Sheet). The purpose of this meeting was to discuss topics related to the Counterfeit, Fraudulent, and Suspect Items (CFSI) program and to provide updates of activities associated with the implementation of the NRC's Agencywide CFSI program specified in SEC 11-0154. The meeting agenda and attendees list are provided as attachments to this meeting summary, and the presentation slides are provided as an enclosure.

This meeting summary is available through the Agencywide Documents Access and Management System (ADAMS) Accession Number ML13060A486. The presentation materials distributed at the meeting are contained in ADAMS ML13043A764. Documents in ADAMS are available electronically at the NRC Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. If you do not have access to ADAMS or have problems accessing the documents located in ADAMS, contact the NRC Public Document Room (PDR) staff at 1-800-397-4209, 301-415-4737, or pdr@nrc.gov.

The meeting lasted from 1:00 p.m. to approximately 4:30 p.m, and a summary of the subjects covered are provided in the following sections below. The meeting began with brief introductions from the contributing participants of the meeting and was followed by opening introductory remarks by Mr. Timothy Frye (CAEB Branch Chief) of the NRC staff.

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DISCUSSION

Overview of NRC Staff Activities

The NRC staff (Mr. Dan Pasquale) began by providing a background and overview of the CFSI program. The Safety Culture Policy was briefly described and is documented as Reference 1. Specifically, the NRC's Safety Culture Policy Statement has been revised to include suppliers. All individuals and organizations performing regulated activities addressed in the NRC's Safety Culture Policy Statement are expected to establish and maintain a positive safety culture in order to avoid complacency and continuously challenge existing conditions and activities in order to identify discrepancies that may result in error or inappropriate action. Issues potentially impacting safety and security are to be promptly identified, fully evaluated, and promptly addressed and corrected commensurate with their significance.

The NRC staff informed the Commission of their plans to identify and implement proactive strategies in SECY-11-0154 (Reference 2). There, 19 actions are discussed to enhance CFSI processes. The 19 actions are in the following categories:

- industry process enhancements and best practices
- regulatory guidance
- communication
- training
- industry oversight for detecting and preventing CFSI

A key aspect of the CFSI program is the voluntary initiatives being developed by the nuclear industry. Though this is only one action in the NRC program, it has 11 components.

In recent years, the perspective of CFSI has shifted from reactive to proactive. Facets of the NRC program are prevention, identification, communication response, and elimination. The nuclear industry has been identifying and adopting best-practices to maintain the integrity of the commercial nuclear supply chain.

A guidance document to assist reporting to the NRC in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 21, is currently being drafted and will include guidance for reporting confirmed counterfeit or fraudulent items. Items suspected of being fraudulently misrepresented can also be reported through the NRC's allegation program.

The NRC staff, in recognition of their role in providing supply chain oversight, will be the final determination if a procurement method provides "reasonable assurance' that a procured item will perform its intended safety or security function, has been reaching out to several external federal agencies and industry organizations to learn how these other industries have been addressing this issue. Organizations such as National Aeronautics and Space Administration (NASA), the Construction Industry Institute (CII), the Semiconductor Industry Association (SIA), and the Independent Electronics Distributors Association (IDEA) have been contacted to consider their relevant experience. Representatives from these organizations actively participated in the meeting discussions.

The NRC staff (Timothy Mossman) then provided a brief background of the role of the NRC's Office of Nuclear Security and Incident Response (NSIR) in responding to the supply of cyber

security related components. NSIR has the primary responsibility to oversee cyber security and recognizes the importance of cyber security and quality in the supply chain. All reactor licensees have approved cyber security plans, and cyber security is regulated under 10CFR Part 73.54. The NRC staff recognizes that malicious codes can be embedded in a CFSI component. Cyber security is addressed in five of the 19 actions (refer to Reference 2).

The NRC staff presented the following plan for implementing the industry initiatives from SECY 11-0154:

1. Prioritize the voluntary industry initiatives
2. Develop plans for highest priority items
3. Schedule monthly public meetings to focus related discussions
4. Establish a plan for implementation of the commitments
5. Perform NRC effectiveness reviews

Nuclear Energy Institute (NEI)

Mr. Russ Bell of NEI then provided a presentation and overview of the Industry Action Plan, titled, "Overview of Industry Action Plan to Address Counterfeit, Fraudulent, and Suspect Items (CFSI)." Though CFSI is a concern to the nuclear industry, the impacts to date have been minimal because of the CFSI countermeasures already implemented by industry. The focus of the CFSI effort is on the companies that receive and supply both safety-related components and non safety-related balance of plant components. NEI agrees with the NRC staff that CFSI needs to be revisited due to the increasing use of digital technology in the new plants that are being built. The quality of components being used in the nuclear industry must be assured.

CFSI is not a new issue for the commercial nuclear industry. This industry established programs and processes decades ago to address the issue, and more recently, the Electric Power Research Institute (EPRI) issued guidance on best-practices to address CFSI. EPRI also developed software for licensees to conduct a self-assessment to evaluate their vulnerability to CFSI, thus, allowing them to identify where enhancements are necessary. NEI has formed a team, consisting of members from the US Department of Energy (DOE), EPRI, and the Nuclear Procurement Issues Committee (NUPIC), to help identify and implement enhancements. Both EPRI and the Institute of Nuclear Power Operations (INPO) have data bases to collect and disseminate information on CFSI incidents. These tools along with an EPRI self-assessment survey will be used to assist the industry in developing action plans to understand the extent of the CFSI issue and to implement any necessary CFSI initiatives.

A persistent issue is how far back into the supply chain do actions have to go. This depends on the component and may vary with a given component. A given component can have multiple uses. A licensee may have to trust a supplier when purchasing a component for a specific purpose. For the NRC staff, the prevailing issue is whether the component will perform its intended safety function.

Electric Power Research Institute (EPRI)

Mr. Mark Tannenbaum of EPRI then provided a presentation titled, “Prevention of CFSIs – Industry Tools and Initiatives,” and discussed how EPRI has been addressing CFSI since 1987. The focus of the efforts by EPRI is to keep CFSI out of the plants, not in mediation. Their efforts have gone beyond receipt inspection to procurement.

Working with suppliers and utilities, EPRI developed standard CFSI language for a procurement clause to be used in purchase orders and service contracts. The clause was developed with information from utilities and vendors, including legal staff. The standard language has to accomplish the following:

- protect licensees against CFSI
- make vendors aware of the potential for CFSI
- avoid dissuading vendors from bidding because of complex contract language
- bring CFSI to a close, instead of pushing CFSI somewhere else
- avoid educating counterfeiters on how to circumvent the protections

Their experience is that EPRI members use the standard procurement clause with minor modifications. The use of the clause is voluntary at this time. Some users have expressed that the clause may have negative implications on an item’s warrantee. EPRI has found that suppliers do not want to be held responsible for the cost of a shutdown at a plant.

A checklist, consisting of 90 questions, was developed to assist employees and managers to look at the way that CFSI is viewed and treated in their organizations. Training modules, for licensees and vendors, have been developed for procurement personnel.

Self-assessment guidelines were developed to identify and prioritize vulnerabilities to CFSI. Letters were sent to members, encouraging them to complete the self-assessment. Other suppliers, besides those at the first tier, were also encouraged to complete the assessment. EPRI anticipates receiving sufficient assessment results to be representative of the nuclear industry; when the results have been compiled and evaluated, the findings will be made available to the NRC staff. No criteria were established to determine what constitutes a successful number of responses or what is meant by *representative*.

INPO representatives on the call-in line submitted that they issued an event report (IER-L4-86) bringing the issue to the attention of the CFSI concerns. In the event report, INPO stressed that all licensees should use the EPRI survey to assess their organization’s present CFSI processes.

Authentication Testing

Mr. Brian Mervak (Scana Corp) made a presentation titled, “Industry Perspectives on Authentication of CFSI.” In his presentation, Mr. Mervak noted that clarification is needed regarding the term “authentication” and to what extent is inspection necessary to confirm an item is authentic.

Mr. Mervak emphasized that a graded approach is needed to identify components at risk, define and implement enhanced inspections.

The term *at-risk* is defined as the exposure to the risk factors that are listed in EPRI guidance. Some components are more susceptible to counterfeiting than others. In general, commodity components, (e.g. components manufactured and purchased in large quantities) are more susceptible than engineered components. But the distinction between commodity and engineered components may be unclear at times, such as when engineered components are composed of many other commodity components. CFSI may be easier to identify at the commodity level than at the engineered component level. Thus, an engineered component is not necessarily at low risk to CFSI.

Inspections are necessary at multiple stages in the procurement process. Factors of an effective inspection program include the type of component, the right tests being performed, and the capabilities of the inspector. Another factor is the stake that a vendor may have in the nuclear industry, (e.g. history, reputation etc.).

Three aspects of enhanced inspections are:

1. Identify components at risk
2. Distinguish between safety and non-safety related components
3. Use relevant expertise when enhanced inspections are defined and implemented.

Quarantine of CFSI

Mr. Bhavesh Patel of Duke Energy then provided a presentation titled, “Industry Perspectives on Quarantine of CFSI.” The process for quarantining is graded and once a CFSI component is identified, various organizations are informed. EPRI and INPO currently maintain equipment databases, and CFSI information is captured in both. NRC will be notified if 10 CFR Part 21 is applicable and if appropriate disposition cannot be determined. CFSI should be segregated to prevent a suspect component from being inadvertently used. The goal is to keep CFSI out of the nuclear plants.

Factors that determine when CFSI is returned include:

- supplied from an OEM or an authorized distributor
- smaller or lesser known supplier
- position (tier) in the supply chain
- commercial supplier vs. an Appendix B supplier
- need for chain of custody
- number of components
- cost of the components
- vintage of the components

Industry Perspectives on Reporting and Sharing Information

In a presentation titled, “Industry Perspectives on Reporting and Sharing of CFSI Information”, Mr. Mark Tannenbaum of EPRI noted that EPRI has been collecting and sharing CFSI related information from the licensees and many of the vendors for several years. “Benchmarking” exercises indicate that voluntary reporting has been effective. Reporting and sharing allows EPRI members to take appropriate action when CFSI is detected. The need to collect this

information was determined after discussions with government agencies and industry organizations. Incidents reported to EPRI are not necessarily associated with safety-related components and are not necessarily reportable under 10 CFR Part 21. Though organizations that are not members of EPRI can report to EPRI, the information that EPRI collects is available only to members of EPRI.

Mr. Tannenbaum noted that the industry reporting initiative consists of the following:

- Reporting under Part 21 when required
- Sharing as operating experience (INPO & EPRI)
- Enabling appropriate action to be taken

When a CFSI occurrence is identified, current guidance is to report it to EPRI so that an administrative review can be performed. This review usually involves contacting the OEM for confirmation. Information related to the incident is captured on the EPRI CFSI database. EPRI agreements with several industry databases enable proactive sharing with licensees having similar stock items and make or model numbers. EPRI members have access to this database, but not all suppliers do. This information can be used to assist purchasing activities and to update receiving activities.

An incident may not be readily confirmed as being CFSI. It can take a very long time before something is confirmed counterfeit. The cost in both time and funds to confirm an incident as CFSI can be prohibitive.

Additionally, legal ramifications complicate reporting. Even when reports are truthful and absent of malice, reporting and sharing can be discouraged due to legal exposure.

Though the information is limited, sharing the information, nonetheless, is a key aspect of addressing CFSI. A counterfeit component, as a part of a larger component, may be difficult to find. Some OEMs are reluctant to address a CFSI incident if the incident is associated with a subcomponent within their own component. The incentives may be minimal if the component is outdated or of low value.

The staff offered that precise supplier selection is essential to proactively reducing CFSI, and reminded the participants of the NRC's revised safety culture policy statement which encourages that mindset. In fact, some companies currently selling to the nuclear community offer financial incentives for information leading to a conviction regarding counterfeiting their product.

Several industry representatives on the call expressed their willingness to share their experiences with the nuclear industry. The staff emphasized that such discussions would have to be either with the industry or in a public meeting instead of being directly with the NRC staff.

Mr. Lonnie Hurst, (Intel) representing the Semiconductor Industry Association (SIA) noted that the semiconductor industry has had anti-CFSI procedures in place for several years, and SIA is willing to assist the commercial nuclear industry in this regard.

Mr. Max Casada, (Phillips 66) representing the Construction Industry Institute (CII) also indicated that his organization has relative information and survey data that may be of

assistance to the industry's development of CFSI initiatives, and would be willing to share them with the group.

Mr. Mark Snider of ERAI indicated he has been keeping a list of counterfeit electronics and electronics suppliers to the U.S. Government for approximately 18 years and has much advice to share about how to address the legal issues of maintain such databases, and would be willing to share this information with the team.

Non-Agenda Topics Discussed:

Definitions: The industry expressed a need to establish some agreed upon definitions related to CFSI. It was noted that NRC regulations do not define the terms that make up *CFSI*. The NRC staff acknowledged the importance of standard definitions. However, the regulations focus on the items' ability to perform its intended safety function. NRC staff closely oversees the commercial dedication process, and its effectiveness to give reasonable assurance that an item will in fact perform its intended safety function. Acknowledging that standard definitions are important, and that they will be a priority going forward, the focus should be on identifying a suspect component and preventing its use. The Semiconductor Industry Association noted that it has established standard definitions for counterfeit electronics and offered to work with the NRC staff to do the same.

Community effort: The problem of CFSI goes beyond geographic borders. A component may be manufactured in one country, finished in the US, and labeled as being made in the US. In general, the perception is that CFSI originates in foreign countries; but CFSI also occurs in the US. Also, counterfeiters are wise to "country of origin" triggers for receiving personnel, and are now shipping from many different locations throughout the world. By expanding the community, more expertise and diverse views are taken into account. Both government and industrial groups have made significant contributions. Efforts with the International Atomic Energy Agency (IAEA) have made detecting and eliminating CFSI from the commercial nuclear supply chain a global issue.

Component quality: The NRC staff does not intend to use the CFSI effort to address issues of poor performance from approved vendors that are not suspected of introducing CFSI. There are other oversight programs in place that monitor that function. The staff recognizes that the industry has established processes for addressing and overseeing poor vendor performance issues within the supply chain. The staff's CFSI efforts are not currently focused on those programs. CFSI issues can always be reported to NRC though the allegation process.

Closing Remarks/Future Meetings:

The NRC ended the meeting with closing remarks given by Mr. Timothy Frye. Proposed dates to the industry were provided and future meeting dates will be finalized between the NRC staff and NEI, and will be formally posted in ADAMs. Upcoming Category 3 meetings will focus on 2-3 high priority items. Topics to discuss at the next meeting will include, but not be limited to:

1. Implementing new prioritization plan for the voluntary initiatives
2. Establishing common definitions
3. Developing acceptable procurement language
4. Developing guidance for reporting and sharing of CFSI events

5. Addressing how far back into the supply chain do actions have to go
6. The Staff's assessment of industry presentations from this meeting

The meeting agenda and attendee list are provided as attachments to this meeting summary, and the presentation slides are provided as an enclosure. Please direct any inquiries concerning this meeting to Daniel Pasquale at 301-415-2498 or via e-mail to Daniel.Pasquale@nrc.gov.

References:

1. USNRC, "Safety Culture Policy Statement", June 2011. ADAMS accession number ML11165A021.

2. "An Agencywide Approach to Counterfeit, Fraudulent, and Suspect Items", SECY-0154, October 28, 2011. ADAMS accession number ML112200150.

Enclosures:

1) NRC/INPO Info Exchange Meeting Presentation Slides (Accession Package Number: ML13043A764).

5. Addressing how far back into the supply chain do actions have to go
6. The Staff's assessment of industry presentations from this meeting

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NAME	DPasquale	TFrye
DATE	03/7/2013	03/8/2013

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ATTACHMENT 1

PUBLIC MEETING FOR DCIP TO DISCUSS TOPICS RELATED TO CFSI PROGRAM MEETING AGENDA

Wednesday, February 13, 2013
1:00 p.m. – 5:00 p.m.

Time	Session Topic	Lead
1:00 p.m.	*Opening Remarks*	**NRO/CAEB**
1:05 p.m.	**NRC CFSI Program Update** Expected Outcome: Provide industry and the public with an update of activities associated with the implementation of the NRC's Agencywide CFSI program specified in SEC 11-0154, including a report of activities, owners, deliverables, and due dates.	**NRO/CAEB**
1:30 p.m.	Q&A Session for NRC Program Update	**NRO/CAEB**
2:00 p.m.	**Industry CFSI Program Update** Expected Outcome: Provide the staff with an update of industry activities associated with the development and implementation of voluntary initiatives in support of implementation of the recommendations specified in SECY 11-0154 including a status of activities, owners, deliverables, and any obstacles that would deter from effective implementation.	**Industry**
2:30 p.m.	Q&A Session for Industry Update	**Industry**
3:00 p.m.	*Break*	***15 min***
3:15 p.m.	**Focus Topic Discussion** Expected Outcome: Provide participants with knowledge, insight and challenges related to specific CFSI topics to facilitate a collective understanding of the presented issues. Topics for today's meeting: 1. Sharing CFSI information 2. Quarantining suspected CFSI evidence 3. Authentication activities	**Industry**
4:30 p.m.	Q&A Session for Focus Topic	**NRO/CAEB**
4:55 p.m.	*Closing Remarks* (Meeting Recap/Open Items/Next Meeting)	**NRO/CAEB**
5:00 p.m.	*Adjournment*	

ATTACHMENT 2

ATTENDANCE SHEET FOR *PUBLIC MEETING TO DISCUSS TOPICS RELATED TO CFSI PROGRAM*

U.S. Nuclear Regulatory Commission, One White Flint North Commission Hearing Room
Wednesday, February 13, 2013
1:00 p.m. – 5:00 p.m.

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Note: Additional participants were present via Bridgeline and Go-To-Meeting.