

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 7, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Timothy L. Hunt, Cognizant Engineer
SUBJECT: Idaho National Laboratory (INL) Report for January 2020

DNFSB Staff Activity: Board's staff member T. Hunt and Outside Expert D. Boyd were on site from January 27-30, 2020, performing oversight duties and completing facility access training.

Suspected Pinhole Found on Ten Drum Overpack (TDOP) Shipped to Waste Isolation Pilot Plant (WIPP). On January 14, 2020, a TDOP sent from INL to WIPP was found to have what appeared to be a small hole in the side. After being informed of the anomaly, DOE-ID, Fluor Idaho, and Carlsbad Certification Program personnel conducted a comprehensive walkdown of all areas within the Advanced Mixed Waste Treatment Project (AMWTP) where TDOPs are stored, inspected, and loaded/unloaded to identify any potential mechanisms capable of causing a puncture similar to the suspected pinhole. No such mechanism was found in any of the TDOP processes. Every TDOP shipped from AMWTP goes through the same sequence of actions as prescribed in the applicable procedures. At each stage—receipt from the manufacturer, pre-staging for use, loading, and shipment—the TDOPs are inspected for condition and integrity of the container itself (e.g. dents, scrapes, gouges, missing paint). Once drums are loaded into the TDOP it receives a container integrity inspection by a qualified transportation certification officer that serves as the formal certification of the TDOP. Then, just prior to being loaded into the TRUPACT for shipment, the TDOP receives a shipment verification inspection entailing another container integrity spot-check. Finally, the TDOP is visually observed by multiple people as it is being loaded into the TRUPACT. Fluor Idaho was awaiting the results of WIPP's investigation before making a determination on whether additional corrective actions on their part were warranted when, on February 1, 2020, the WIPP follow-up investigation determined the defect was not a hole.

Implementation of NFPA 70E, 2018 Edition. A technical amendment to Title 10, Code of Federal Regulations, Part 851 (10 CFR 851), *Worker Safety and Health Program*, was published on December 18, 2017, to update the safety and health standards, including NFPA 70E, *Standard for Electrical Safety in the Workplace*, and delete the obsolete directives currently incorporated by reference in 10 CFR 851. The Idaho Cleanup Project (ICP) contractors have been complying primarily with the 2004 edition of NFPA 70E, explicitly invoked by 10 CFR 851, since 2006. Subsequent to the issuance of the 2004 edition, four revisions to this code have been published (2009, 2012, 2015, 2018). Overall, the NFPA 70E, 2018 edition—which incorporates the changes made in 2009, 2012, and 2015—reflects a major shift in how contractors evaluate and manage electrical risk. Fluor Idaho has a three-phased-approach in its 10 CFR 851 implementation plan that categorizes the effort to bring the ICP electrical program into compliance with the 2018 NFPA 70E as “very significant.” Phase I included revisions to applicable documents required to implement NFPA 70E, implementation of compensatory controls for arc flash protection, completion of employee training on compensatory controls, and initiation of preventive maintenance on critical electrical equipment. Phase I was completed in November 2019. Phase II includes NFPA 70E electrical maintenance program development. This work was recently approved and is expected to take 18 months to complete. Phase III includes full NFPA 70E program implementation (electrical equipment maintenance/labeling); expected to take 6 years. Per the 10 CFR 851 technical amendment, compliance with the latest NFPA 70E was required by January 17, 2019.