

Information Bulletin

Inadequate Safety Analysis Identified for the Potential Release of Toxic Chemicals

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Tracking No: 539

Summary: An inadequate Safety Analysis condition was identified following discovery that a PCB transformer fire may result in a hazardous material release great enough to require accident analysis and controls not currently included in the facility's Final Safety Analysis.

Discussion of Activities: During the review of a polychlorinated biphenyl (PCB) transformer fire scenario it was determined that the consequences from toxicological and environmental hazards associated with the exposure of PCB to high temperatures could potentially necessitate accident analysis and controls in the facility Final Safety Analysis Report (FSAR). This was determined to be a potential inadequacy in the FSAR. The facility safety basis did not address the potential of a fire related accident involving PCB transformers which could result in the release of toxic chemicals. Although PCB are a standard industrial material, it was determined the safety basis needed to provide a qualitative assessment of a potential accident and the programs providing the required safety factors.

Analysis: The original FSAR was written to the requirements of U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide requirements. Since the original FSAR was written, changes in DOE orders, standards, and guidance documents have occurred causing the current FSAR to become outdated. The requirements in the NRC guide focused on the safety of the reactor with potential releases due to reactor accidents and their impact on the public. Over the years, changes in philosophies and the requirements for a documented safety analysis require considerations for the safety aspect to the worker and the environment, as well as the public.

Safety basis requirements are intended to further the objective of making safety an integral part of how work is performed. The facility has a significant quantity of PCB (~ 450 gallons). Due to the toxicological and environmental consequences associated with PCB it was determined the safety basis should provide a qualitative assessment of potential accidents and programs providing the required safety factors.

Recommended Actions: Safety Analysis documents must continually be reviewed and updated to reflect changing requirements and potential hazards to ensure the integrity of the safety envelope is maintained.

Cost Savings/Avoidance: Not Evaluated

Work Function: Authorization Basis; Conduct of Operations, General; Environmental Protection, Releases

Hazards: Environmental Release; Personnel Exposure, Unreviewed Safety Question (USQ), Environmental Release, PCB

ISM Core Functions: Analyze the Hazards; Develop and Implement Hazard Controls

Keywords: Documented Safety Analysis, Authorization Basis, PCB

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References: EM-RL--PHMC-FFTF-2007-0003