

Abstract Title:

**Integration of FHA and DSA Development Processes**

Technical Paper Topic:

**Fire Hazards Analysis**

Personal Info

Ray A. Sprankle  
RSL Safety Corporation,  
contracted to: Savannah River Nuclear Solutions, Aiken, SC

Primary phone: 706-840-0039  
Secondary Phone: 803-557-9470  
Primary e-mail: ray.sprankle@hotmail.com  
Secondary e-mail: ray.sprankle@srs.gov

527 Crystal Creek East  
Martinez, Georgia 30907

Bio:

**Ray A. Sprankle**

Over twenty eight years working experience in the various phases of development and implementation of commercial and Department of Energy (DOE) nuclear fire protection programs, and in assessment, oversight, and management of fire protection component designs, system installations, and technical service projects. Extensive experience in development and review of fire-related safety basis documentation, fire hazard analysis, and licensing documentation, performing audits, assessments, and operational readiness reviews of fire protection systems and programs. Performed and has managed the performance of fire hazards analyses, safety basis documents, thermal and fire modeling calculations, life safety analyses, and fire code and standards compliance reviews for over 200 nuclear and non-nuclear facilities throughout the country.

Abstract:

**Integration of FHA and DSA Development Processes**

DOE Order 420.1B requires that a nuclear facility's Fire Hazards Analysis (FHA) conclusions be "incorporated into the Documented Safety Analysis (DSA) and integrated into design basis and beyond design basis accident conditions". Additionally, enhanced integration and consistency between the FHA and DSA fire scenarios is becoming increasingly scrutinized by Department of Energy (DOE), program managers, safety system oversight personnel, internal and external auditors, and evaluators. This presentation provides an efficient and workable approach to achieving the required integration necessary to satisfy the Order and the DOE.

The presentation introduces methods to implement an effective FHA/DSA integration process, discusses technical and organizational items which can hinder full integration, and provides a means for overcoming these. Information is provided to address relevant fire protection-related criteria driven by different organizations and sets of rules that must be addressed in FHA and DSA fire scenario and event analyses. Discussion issues related to differences and similarities in terminology, infrastructure, scope, format, style,

types of fire analysis, level of detail, and level of rigor are discussed.

This presentation equips the FPE with the tools necessary to satisfy in a single document, the fire analysis needs of both the classic FHA driven by DOE O 420.1B, Chapter II-prescribed requirements and the DSA driven by both the rule 10 CFR 830, Subpart B and DOE O 420.1B requirements.