

**Information Sheet: Fire Research and Regulation Knowledge Management, Aixa Belen-Ojeda, Jessica Kratchman, Hugh “Roy” Woods, David Stroup, and Felix Gonzalez (NRC/RES/DRA)**

**Background**

The results of the Individual Plant Examinations of External Events program and actual fire events indicate that fire can be a significant contributor to nuclear power plant (NPP) risk, depending on design and operational conditions. During the last 30 years, NRC has undertaken many studies to better understand fire hazards, fire events, and fire risk in NPPs. The Office of Nuclear Regulatory Research (RES), Fire Research Branch (FRB), initiated the Fire Research and Regulation Knowledge Base Project to assemble the collection of NRC fire-related publications issued over the past 30 years. FRB also has undertaken a similar project to document and preserve the history of the influential Browns Ferry NPP fire of 1975 in one resource, the “Short History of Fire Research,” to cover the main areas.

**Approach**

**NUREG/BR-0465 Fire Protection and Fire Research Knowledge Management Digest**

The Fire Research and Regulation Knowledge Base is a user-friendly database on Visual Basic for Applications (VBA). The regulatory knowledge information provides the user with information needed during activities such as the inspections or review processes. The database includes publicly available documents such as 10 CFR Part 50, guidelines for fire protection in NPPs, fire inspection manuals, fire inspection procedures, generic letters, bulletins, information notices, circulars, administrative letters, regulatory issues summaries, and regulatory guides. This will save the user considerable time because all the relevant fire documents are gathered and organized in one easy-to-use CD. The technical knowledge information includes NRC technical publications (i.e., NUREGs) that serve as the background information to the regulatory documents. It includes reports of NRC-sponsored fire experiments, studies, and probabilistic risk assessments (PRAs). These documents often provide the technical bases and insights for the fire protection requirements and guidelines.

**NUREG/BR- 0361 The Browns Ferry Nuclear Plant Fire of 1975 and the History of NRC Fire Regulations:**

The Browns Ferry NPP (BFN) fire of 1975 occurred 3 months after NRC began operations. The fire prompted a new series of fire protection regulations and is a

formative event in the history of fire protection regulations for NPPs. *The BFN of 1975 Brochure and DVD* provides all major public documents, publications, regulations, and presentations pertaining to the Browns Ferry fire (1) to preserve the history and legacy of this important event and (2) to provide a one-stop information resource in a user-friendly format to gain a well-informed perspective about the BFN fire. Combined, these sources create a well-rounded picture of the event for varied types and levels of users; individually, they paint a detailed picture of specific aspects of the event.



**Figure 1. Screenshot of the BFN DVD Main Menu.**

**NUREG/BR-0364 Short History of Fire Safety Research**

The knowledge management program includes a “Short History of NRC Fire Safety Research.” which covers its four phases: **1975-1987**—the Fire Protection Research Program (FPRP) investigated the effectiveness of changes made to NRC’s fire protection regulations after the 1975 Browns Ferry NPP fire; **1987-1993**—early Fire PRAs were conducted (e.g., the LaSalle Risk Methods Integration and Evaluation Program [RMIEP]); **1993-1998**—incremental improvements were made to the RMIEP methods; and **1998-present**—methods were developed to better apply the Commission’s PRA technology policy (that it be used where practical in all regulatory matters) to fire risk technology.

**For More Information**

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