

PACKAGE ID - 001316I366500 BACFIRE

KWIC TITLE - Common Cause Failure Analysis of Basic Events

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LIMITATION CODE -UNL **AUDIENCE CODE** - UNL

COMPLETION DATE - 08/01/1984 **PUBLICATION DATE** - 08/01/1984

DESCRIPTION - BACFIRE, designed to aid in common cause failure analysis searches among the basic events of a minimal cut set of the system logic model for common potential cause of failure. The potential cause of failure is called a qualitative failure characteristics. The algorithm searches qualitative failure characteristics (that are part of the program input) of the basic events contained in a set to find those characteristics common to all basic events. This search is repeated for all cut sets input to the program. Common cause failure analysis is thereby performed without inclusion of secondary failure in the system logic model. By using BACFIRE, a common cause failure analysis can be added to an existing system safety and reliability analysis.

PACKAGE CONTENTS - Media Directory; Software Abstract; User's Manual;
Media Includes Source Code, Sample Problem Input and Output Data;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 CD Rom

METHOD OF SOLUTION - BACFIRE searches the qualitative failure characteristics of the basic events contained in the fault tree minimal cut set to find those characteristics common to all basic events by either of two criteria. The first criterion can be met if all the basic events in a minimal cut set are associated by a condition which alone may increase the probability of multiple component malfunction. The second criterion is met if all the basic events in a minimal cut set are susceptible to the same secondary failure cause and are located in the same domain for that cause of secondary failure.

COMPUTER - IBM360/65

OPERATING SYSTEMS - OS/MVT

PROGRAMMING LANGUAGES - FORTRAN-IV

SOFTWARE LIMITATIONS - Maxima of 1001 secondary failure maps, 101 basic events, 10 cut sets.

SOURCE CODE AVAILABLE (Y/N) - Y

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RELATED SOFTWARE - BACFIRE is similar to COMCAN, another common cause failure analysis program.

HARDWARE REQS - 130K bytes of memory are required for execution.

TIME REQUIREMENTS - NEA-DB executed the test case on IBM 3081 in 1 CPU second.

ABSTRACT STATUS - Released tested 9/24/1999.

SUBJECT CLASS CODE - Z

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
B CODES
FAILURES
FAULT TREE ANALYSIS
RELIABILITY
SYSTEM FAILURE ANALYSIS

EDB SUBJECT CATEGORIES -
990200

SPONSOR - DOE/DP

PACKAGE TYPE - TESTED