

PACKAGE ID - 001204IPCXT00 PSAPACK4.2

KWIC TITLE - A Code for Probabilistic Safety Assessment

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

COMPLETION DATE - 10/01/1997 **PUBLICATION DATE** - 01/01/1995

DESCRIPTION - An integrated fault-event tree software package PSAPACK was developed for level-1 PSA using personal computers. It is a menu driven interactive modular system which permits different choices, depending on the user's purposes and needs. The event tree development module is capable of developing the logic accident sequences based on the user's specified relations between event tree headings. Identification of success sequences and core damage sequences is done automatically by the code based on the success function input by the user. It links minimum cut sets (MCS) from system fault trees and performs the Boolean reduction. It can also retrieve data from the reliability data base to perform the quantification of accident sequences.

PACKAGE CONTENTS - Media Directory; Software Abstract; Computer Manual;
Media Includes Source Code, Readme File;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 4 3.5 Diskettes

COMPUTER - IBM PC/XT

OPERATING SYSTEMS - Machine dependent

PROGRAMMING LANGUAGES - Fortran + Assembler

SOFTWARE LIMITATIONS - The fault tree module contains full screen graphics and text editors. It is possible to transfer the tree structure from graphics to text format and vice-versa. Fault tree reduction and minimum cut set determination is performed by well known codes like ALLCUTS, MOCUS, or FTAP. Convenient interfaces have been developed for input data preparation and for storage of the results in the MCS library. THE MCS module can be used for the MCS screening and quantification. PC version of SAMPLE code is used in this module for uncertainty analysis.

SOURCE CODE AVAILABLE (Y/N) - Y

RELATED SOFTWARE - A reliability data base (RDB) module is used for the management of reliability data. This module can create a data base

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RELATED SOFTWARE - (CONT) retrieving data from a RDB compiled by the IAEA from 21 sources and which contains about 1000 records. All components and failure modes normally considered in PSA are included in the RDB. Reliability data can be screened and modified by the user.

OTHER PROG/OPER SYS INFO - A DOS utilities module is used for file management functions. It covers practically all requirements.

HARDWARE REQS - The hardware requirements include: IBM PC/XT, AT, or compatible with at least 512KB memory, 1 diskette drive, 1 hard disk 10 Mb drive and a printer. A monochrome or color graphics card with a monochrome or color graphics display should be available if the fault tree graphics editor is used. 3.0 Mb space are occupied on a hard disk by the PSAPACK after its installation. This is a hard disk version of the package.

REFERENCES - G. Caruso et al, PSAPACK4.2 A Code for Probabilistic Safety Assessment Level 1, IAEA Vienna, 1995.

ABSTRACT STATUS - Release tested 3/5/98.

SUBJECT CLASS CODE - GP

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
P CODES
FAULT TREE ANALYSIS
REACTOR SAFETY
PROBABILISTIC ESTIMATION
STATISTICS
SAFETY ANALYSIS

EDB SUBJECT CATEGORIES -
990200

SPONSOR - NEA

PACKAGE TYPE - TESTED