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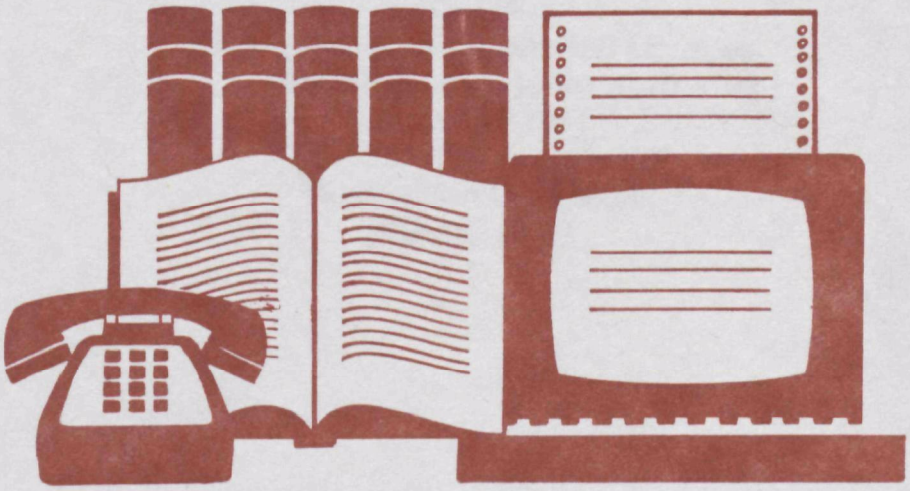

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Chemical Emergency Preparedness and Prevention

BIBLIOGRAPHY ON

CHEMICAL EMERGENCY PREPAREDNESS AND PREVENTION

DECEMBER 1986

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INTRODUCTION

The effects of the accidental release of acutely toxic chemicals gained worldwide attention recently, when hazardous chemicals were accidentally released from a chemical plant in Bhopal, India and Institute, West Virginia. These events focused the concern of federal and state governments, local communities, and the public on such accidents both in terms of how to prevent them from happening, as well as to how to be prepared for them should they occur. The Agency responded to this concern by initiating the Chemical Emergency Preparedness Program (CEPP). The goals of this voluntary program were to increase community awareness of chemical hazards and to develop State and local emergency response plans.

Recently, the Congress acknowledged the importance of emergency planning and the community's right to know about chemicals in their environment by passing the Superfund Amendments and Authorization Act of 1986 (SARA). Title III of SARA, the Emergency Planning and Community Right to Know Act, establishes an organizational structure and process for States and local communities to follow in developing and testing emergency plans. It also requires industry to provide information on hazardous chemicals to local communities, fire departments, and States. SARA was signed into law on October 17, 1986. Therefore, the issuance of this Bibliography, which is concerned with both chemical preparedness and prevention information, is timely and important.

This bibliography was prepared in the Headquarters Library by Michelle S.L. Lee, Chief Reference Librarian. Emma McNamara, Head Librarian, and Mary Hoffman, Reference Librarian, also contributed.

Citations were selected for their relevance to EPA's Chemical Emergency Preparedness and Prevention Program. The bibliography is organized according to the following major areas: 1) hazard identification, 2) prevention, 3) mitigation, 4) ramifications, 5) information access, 6) conferences, 7) international aspects.

The articles in the bibliography were taken directly from the database that cited them; no editing was done by the author. Because some of the references deal with multiple subjects, cross references are noted for ease of use and the reader is informed where to look for more information e.g. **SEE SECTION I-D FOR MORE DETAIL**).

Citations preceded by an asterisk (*) are held in the U.S. EPA Headquarters Library. Other citations can be borrowed for EPA employees through interlibrary loan. The source of the citation is noted by an alphabetical code enclosed in parentheses at the end of the entry. The databases and code abbreviations are listed below:

(AQU) Aquatic Sciences & Fisheries Abstracts
Cambridge Scientific Abstracts
5161 River Road
Bethesda, MD 20816

(CA) CA Search
Manager, User Education
Chemical Abstracts Service
P. O. Box 3012
Columbus, OH 43201

(CAS) CAS Online
Chemical Abstracts Service
2540 Olentangy River Road
P. O. Box 3012
Columbus, OH 43210

(COM) Compendex
Communications Services Department
Engineering Information, Inc. (Ei)
345 E. 47th St.,
New York, NY 10017

(EEM) Ei Engineering Meetings
Engineering Information, Inc.
345 E. 47th St.,
New York, NY 10017

(ENV) Enviroline
Environment Information Center, Inc.
292 Madison Avenue
New York, NY 10017

(ENVB) Environmental Bibliography
Environmental Studies Institute
2074 Alameda Padre Serra
Santa Barbara, CA 93103

(FLU) BHRA Fluid Engineering Abstracts (FLUIDEX)
FLUIDEX Database Support Team
Cranfield
Bedford, MK43 OAJ
United Kingdom

(FR) Federal Register
Capital Services, Inc.
415 Second Street NE
Suite 200
Washington, DC 20002

(INS) INSPEC
(INS2) IEEE Service Center
445 Hoes Lane
Piscataway, NJ 08854-4150

(LC) Library of Congress Online Catalog
10 First St., SE
Washington, DC 20540

(MAG) Magazine Index
Information Access Company
11 Davis Drive
Belmont, CA 94002

(MED) MEDLINE
Medlars Management Section
National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20209

(NNI) National Newspaper Index
Information Access Company
11 Davis Drive
Belmont, CA 94002

(NTIS) National Technical Information Service
U.S. Dept. of Commerce
5285 Port Royal Road
Springfield, VA 22041

(OSH) Occupational Safety & Health
Technical Information Branch
National Institute for Occupational
Safety & Health
4676 Columbia Parkway
Cincinnati, OH 45226

(PAIS) Public Affairs Information Service, Inc.
11 West 40th Street
New York, NY 10018

(POL) Pollution Abstracts
Cambridge Scientific Abstracts
5161 River Road
Bethesda, MD 20816

(TOX) Toxline
Medlars Management Section
National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20209

The library staff wishes to thank Elaine Davies, Cathleen Shepherd and Anastasia Watson from the Preparedness Staff, Office of Solid Waste and Emergency Response for their excellent advice and technical direction in the development of this bibliography.

For additional information, you may wish to contact the EPA Preparedness Staff, Office of Solid Waste and Emergency Response at (202) 475-8600 or the Chemical Emergency Preparedness Program at (800) 535-0202 (except in Washington, DC and Alaska), or your state contact (see Section V).

Contact the EPA Headquarters Library for copies of the Chemical Emergency Preparedness and Prevention Bibliography (Phone: (202) 382-5921).

Other titles available from the EPA Bibliographic Series:

1. Indoor Air Pollution.
   by Michael Bouchard, June 1985.
   EPA/IMSD-85-002. PB-86-139375/AS

2. Information Resources Management.
   by Brigid Rapp, November 1985.
   EPA/IMSD-85-003.

3. Estuarine Management Program.
   by Brigid Rapp, November 1985.

4. Asbestos in Schools.
   by Michelle Lee, February 1986.
   EPA/IMSD-86-001.

5. Indoor Radon Pollution.
   by Mary Hoffman, May 1986.
   EPA/IMSD-86-002.

I. HAZARD IDENTIFICATION

I. HAZARD IDENTIFICATION

A. SPECIFIC CHEMICALS

This section contains articles covering the following chemicals:

Ammonia
Ammonium nitrate
Ammonium phosphates
Benzene
Calcium chloride
Calcium hydroxide
Calcium oxide
Carbon dioxide
Chlorine
Dioxins
Ethylbenzene
Ethylene
Ethylene dichloride
Ethylene glycol
Ferric chloride
Hydrofluoric acid
Hydrogen
Hydrogen fluoride
Methyl isocyanate
Natural gas
Nitric acid
Nitrogen dioxide
Nitrogen tetroxide
Oleum
Petroleum
Polychlorinated biphenyls (PCBs)
Sulphur
Sulphuric acid
Toluene
Uranium

2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)

81-04193
Accidental Release of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) at Seveso, Italy II. TCDD Distribution in the Soil Surface Layer
Di Domenico, A.; Silano, V.; Viviano, G.; Zapponi, G.
Lab. Igiene Lavoro
ECOTOXICOL. AND ENVIRON. SAFETY VOL. 4, NO. 3 , pp. 298-320
Publ.Yr: 1980
Languages: ENGLISH

A chemical plant failure 13 miles north of Milan, Italy, produced a seriously dangerous contamination of inhabited areas, extending from the plant itself for a few kilometers in the south-southeast direction. Many environmental specimens were sampled and analyzed to assess distribution of TCDD in the soil surface layer of the territory hit so as to enable the appropriate sanitary measures to be taken. On the basis of contamination maps, three zones were established. This paper describes the procedures adopted to assess the contamination of soil due to TCDD. TCDD concentrations were seen to vary in the range <0.75 to similar to 20 multiplied by 10 super(3) mu g/m super(2).

Descriptors: PCB compounds; Soils; Sampling; Contaminants; Pollutant detection; Land pollution
Identifiers: TCDD
(POL)

0147790 81-000813
ACCIDENTAL RELEASE OF 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD) AT SEVESO, ITALY-VERTICAL DISTRIBUTION OF TCDD IN SOIL,
DI DOMENICO, ALESSANDRO ; SILANO VITTORIO; VIVIANO GIUSEPPE; ZAPPONI GIOVANNI
ISTITUTO SUPERIORE DI SANITA, ROME,
ECOTOXICOLOGY & ENV SAFETY, SEP 80, V4, N3, P327 (12)

SURVEY REPORT TCDD CONCENTRATIONS IN SOIL SAMPLES TAKEN FROM SEVESO, ITALY, WERE MONITORED AFTER THE JULY 1976 CHEMICAL SPILL THERE. DIFFERENCES IN CONCENTRATIONS ACCORDING TO SOIL DEPTH WERE RECORDED. THE HIGHEST TCDD LEVELS OCCURRED IN SOIL THAT WAS 0.5-1.5 CM BELOW THE SURFACE. TCDD LEVELS IN SOIL BELOW THE 8 CM DEPTH WERE SLIGHTLY HIGHER IN 1977 THAN IN 1976, IMMEDIATELY AFTER THE ACCIDENT. (1 DRAWING, 4 GRAPHS, 2 MAPS, 4 REFERENCES, 6 TABLES)

DESCRIPTORS: *TETRACHLORODIBENZODIOXINS ; *ITALY ; *SOIL ANALYSIS ; *PESTICIDE RESIDUES ; MONITORING, ENV-LAND ; AREA COMPARISONS ; MATHEMATIC MODELS-CHEMICAL
REVIEW CLASSIFICATION: 02
(ENV)

0973969 E.I. Monthly No: EI8012087596 E.I. Yearly No: EI80004210
ACCIDENTAL RELEASES OF AMMONIA: AN ANALYSIS OF REPORTED INCIDENTS.
Baldock, P. J.
Imp Chem Ind, Billingham, Engl
Loss Prevention: A CEP Technical Manual v 13 1980, Loss Prev Symp, 13th Natl Meet of AIChE, 86th in Conjunction with Petro-Chem and Refin Expo - PETRO EXPO, 10th, Houston, Tex, Apr 2-5 1979. Publ by AIChE, New York, NY, 1980 p 35-42
CODEN: LOPVAJ ISSN: 0097-2312
Language: ENGLISH

The author has analyzed over 100 cases of accidental releases of ammonia. The object of this study is to review the characteristic features of these accidents and point out some lessons which can be drawn from them. It is shown that containment is of fundamental importance. In order to achieve this, high standards of design, construction, operation, maintenance and inspection are essential. As well as to manufacturing and storge plants, this also applies to pipelines, where surge pressures in particular must be guarded against, and damage by alien operators is always a risk. It is true also for mobile transport units, where substantial improvements are necessary if the frequency and severity of accidents are to be reduced. 16 refs.

Descriptors: *AMMONIA; CHEMICALS—Safe Handling; ACCIDENT PREVENTION
Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals)
; 804 (Chemical Products); 914 (Safety Engineering)
80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(COM)

0177055 *85-010147
AMMONIUM NITRATE
ENV CANADA ENV PROTECTION SERVICE REPORT, JUN 84 (81)
(ENV)

******** SEE SECTION III-A FOR MORE DETAIL ********

0274774 EIM8502-006454
ANALYSIS OF LIQUEFIED NATURAL GAS (LNG) RELEASE PREVENTION SYSTEMS.
Pelto, P. J.; Baker, E. G.
Battelle Pacific Northwest Lab, Richland, WA, USA
Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).
Conference Location: Philadelphia, PA, USA Conference Date: 1984 Aug 19-22
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1984 Summer. Publ by AIChE, New York, NY, USA Pap n 2d, 21p 1984
CODEN: ACENC9
E.I. Conference No.: 05700
Language: English

This paper summarizestheresultsof astudy ofthe effectiveness of the release prevention systems used in the LNG industry. An overview study characterized the basic types of LNG facilities, identified possible weak links and information needs, and developed lists of release scenarios which are typical of the hazards involved in LNG operations. A reference import terminal and peakshaving facility were selected for more detailed study in which the postulated release scenarios were analyzed to predict the frequency of LNG releases, determine the reliability of the emergency sensors and shutdown systems, estimate the size of potential LNG releases, and evaluate release prevention design alternatives. Failure modes and effects analysis, as well as fault tree analysis techniques were used to provide relative comparisons for evaluating the release prevention system effectiveness. 13 refs.

Descriptors: *NATURAL GAS, LIQUEFIED—*Accident Prevention
Identifiers: IMPORTANT TERMINAL/PEAKSHAVING FACILITY; POSTULATED RELEASE SCENARIOS; FAILURE MODES AND EFFECTS ANALYSIS; FAULT TREE ANALYSIS; RELEASE PREVENTION SYSTEM EFFECTIVENESS
Classification Codes: 512 (Petroleum & Related Deposits); 522 (Gas Fuels); 914 (Safety Engineering) 51 (PETROLEUM ENGINEERING); 52 (FUEL TECHNOLOGY); 91 (ENGINEERING MANAGEMENT)

(EEM)

95055868 CA: 95(7)55868f JOURNAL
Aquatic toxicity of forty industrial chemicals: testing in support of hazardous substance spill prevention regulation
AUTHOR(S): Curtis, M. W.; Ward, C. H.
LOCATION: Dep. Biol. Environ. Sci., Rice Univ., Houston, TX, 77001, USA
* JOURNAL: J. Hydrol. (Amsterdam) DATE: 1981 VOLUME: 51 NUMBER: 1-4
PAGES: 359-67 CODEN: JHYDA7 ISSN: 0022-1694 LANGUAGE: English
SECTION:
CA004003 Toxicology

IDENTIFIERS: industrial chem aquatic toxicity regulation, spill prevention chem std
DESCRIPTORS: Water pollution... by industrial chems., aquatic animals response to, in support of hazardous spill prevention regulation Standards,legal and permissive... for industrial chems., aquatic toxicity in relation to Palaemonetes pugio... Pimephales promelas... industrial chems. toxicity to, in support of hazardous spill prevention regulation Toxicity... of industrial chems., to aquatic animals, in support of hazardousspill preventionregulation Chemicals,industrial... toxicity of, to aquatic animals, in support of hazardous spill prevention regulation

CAS REGISTRY NUMBERS: 60-00-4 62-56-6 75-52-5 100-01-6 100-44-7
107-15-3 108-46-3 1309-64-4 biological studies, toxicity
of, to aquatic animals, in support of hazardous spill
prevention regulation 62-55-5 75-36-5 79-19-6 79-46-9
86-57-7 91-23-6 95-50-1 98-88-4 99-61-6 99-65-0
102-08-9 106-46-7 109-21-7 121-57-3 123-72-8 142-71-2
301-04-2 506-96-7 544-18-3 584-84-9 592-85-8 1111-78-0
1303-33-9 1600-27-7 5329-14-6 7681-52-9 7773-06-0
7789-43-7 12125-01-8 13814-96-5 13826-83-0 16919-19-0
toxicity of, to aquatic animals, in support of hazardous
spill prevention regulation
(CA)

1039115 DE82006186
Assessment of Research and Development (R And D) Needs in Ammonia Safety and Environmental Control
Brenchley, D. L. ; Athey, G. F. ; Bomelburg, H. J.
Battelle Pacific Northwest Labs., Richland, WA.
Corp. Source Codes: 048335000; 9512268
Sponsor: Department of Energy, Washington, DC.
Report No.: PNL-4006
Sep 81 315p
Languages: English
NTIS Prices: PC A14/MF A01 Journal Announcement: GRAI8408; NSA0700
Country of Publication: United States
Contract No.: AC06-76RL01830
(NTIS)

****** SEE SECTION II-A FOR MORE DETAIL ******

0176251 *85-005895
BHOPAL: THE ENDLESS AFTERSHOCKS,
* CHEMICAL WEEK, DEC 19, 84, V135, N25, P33(5)

JOURNAL ARTICLE SUBSEQUENT TO THE ACCIDENT AT UNION CARBIDE IN BHOPAL, CHEMICAL COMPANIES ARE LOOKING SERIOUSLY AT THEIR OWN SAFETY MEASURES. THE INCIDENT IN INDIA AND SUBSEQUENT REACTIONS ARE SUMMARIZED. EPA PROGRAMS, THE PRODUCTION OF METHYL ISOCYANATE (MIC) AND THE IMPENDING LAWSUIT ARE DISCUSSED. MANY COMPANIES THAT USE MIC HAVE BEEN FOLLOWING THE LEAD OF UNION CARBIDE AND SHUTTING DOWN OPERATIONS UNTIL INVESTIGATIONS ARE OVER, WHILE OTHERS ARE TRYING TO FIND MIC ALTERNATIVES. REACTIONS IN ISRAEL, JAPAN AND BRAZIL ARE ALSO MENTIONED. (1 PHOTO, 1 TABLE,)

DESCRIPTORS: *CONTAMINATION INCIDENTS ; *INDIA ; *CHEMICAL DAMAGE ; *CHEMICAL SPILLS ; *UNION CARBIDE CO ; LITIGATION, ENV-NON U S ; CHEMICAL STANDARDS
REVIEW CLASSIFICATION: 02
(ENV)

0179325 *85-023920
CARBON DIOXIDE: ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS
ENV CANADA ENV PROTECTION SERVICE REPORT, NOV 84, P1(68)
(ENV)

******** SEE SECTION III-A FOR MORE DETAIL ********

0182080 *86-040689
CASE HISTORY OF A MAJOR NITRIC ACID SPILL,
MCVEIGH, THOMAS ROY F. WESTON INC, CO, ; ET AL, ; FJELDAHL, LANAY ; ZIMMERMAN, JOHN
ENV PROGRESS, AUG 85, V4, N3, P212(5)

JOURNAL ARTICLE: ON APRIL 3, 1983, A TANKER CAR IN A SWITCHING YARD IN DENVER, CO, WAS ACCIDENTALLY PUNCTURED AND 55 CU M OF A 99% SOLUTION OF NITRIC ACID WERE SPILLED. THE RESULTING VAPOR CLOUD OF POTENTIALLY TOXIC NITROGEN DIOXIDE FORCED THE EVACUATION OF NEARLY 5000 RESIDENTS. REPRESENTATIVES FROM NUMEROUS GOVERNMENTAL AGENCIES RESPONDED, INCLUDING THE COLORADO DEPT. OF HEALTH. RESPONSE TEAMS NEUTRALIZED THE SPILL WITH SODA ASH WHILE AIR MONITORING WAS UNDERWAY. FOLLOW-UP MITIGATIVE MEASURES INVOLVED GROUND AND SURFACE WATER SAMPLING AND SOIL DECONTAMINATION.

DESCRIPTORS: *NITRIC ACID ; *CHEMICAL SPILLS ; *DENVER ; *CONTAMINATION INCIDENTS ; *SOIL CONTAMINATION ; *ENV ACTION; STATE LOCAL ; *GROUNDWATER DECONTAMINATION ; VAPORS, TOXIC
REVIEW CLASSIFICATION: 02
(ENV)

0171012 84-002921
THE CHEMICAL ACCIDENT AT SEVESO (ITALY): STATISTICAL ANALYSIS IN REGIONS OF LOW CONTAMINATION ,
BELLI, G. ; BRESSI G.; CERLESI S.; RATTI S. P.
INST TECNICO INDUSTRIALE PAVIA, ITALY,
* CHEMOSPHERE, 1983, V12, N4-5, P517 (5)
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

1004738 DE83700114
Emergency Exposure Levels for Natural Uranium
Spoor, N. L. ; Harrison, N. T.
National Radiological Protection Board, Harwell (England).
Corp. Source Codes: 065084000; 4502700
Report No.: NRPB-R-111
Dec 80 15p
U.S. Sales Only.
Languages: English
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8323
Country of Publication: United Kingdom

An attempt is made to identify the inhalation hazards associated with the over-exposure of workers and of the general public, following an accidental release of uranium hexafluoride. Maximum emergency concentrations are recommended for periods of 10, 30, and 60 minutes. The quantitative aspect of the assessment is considered in the context of the development of exposure standards for chemical substances and this facilitates the derivation of levels which are compatible with occupational and public health experience and attainable by management, and to which most workers and members of the general public may be exposed without adverse effect. The radiological implications are also considered. (Atomindex citation 13:708135)

Descriptors: *Uranium Hexafluoride; Accidents; Dose Limits; Emergency Plans; Inhalation; Personnel; Populations; Radiation Hazards; Release Limits; Time Dependence; Working Conditions
Identifiers: *Foreign technology; ERDA/560161; ERDA/220900; ERDA/054000; NTISINIS
Section Headings: 6R (Biological and Medical Sciences--Radiobiology); 57V (Medicine and Biology--Radiobiology); 68F (Environmental Pollution and Control--Radiation Pollution and Control)
(NTIS)

0175112 *85-001244
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: AMMONIUM PHOSPHATES
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84, (69)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0175111 *85-001243
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: BENZENE
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84, (116)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0176709 *85-007870
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: CALCIUM CHLORIDE,
ENV CANADA ENV PROTECTION SERVICE REPORT, MAY 84 (86) (ENV)

****** SEE SECTION III-A FOR MORE DETAIL *******

0177076 *85-010493
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: CALCIUM OXIDE AND HYDROXIDE,
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84 (64)

INFORMATION IS COMPILED TO AID SPILL SPECIALISTS IN DESIGNING COUNTERMEASURES FOR SPILLS OF CALCIUM OXIDE AND HYDROXIDE. PHYSICAL AND CHEMICAL DATA PERTAINING TO THE COMPOUNDS ARE INCLUDED, AND PRODUCTION AND USE IN CANADA ARE SURVEYED. CONTAMINANT TRANSPORT IS DISCUSSED IN TERMS OF LEAK NOMOGRAMS, ATMOSPHERIC DIFFUSION, AND BEHAVIOR IN WATER. RECOMMENDED COUNTERMEASURES FOR SPILLS ON LAND AND WATER ARE OUTLINED. TOXICOLOGICAL AND HUMAN HEALTH ISSUES ARE ALSO REVIEWED. (NUMEROUS DIAGRAMS, REFERENCES)

DESCRIPTORS: *CHEMICAL SPILLS ; *CALCIUM COMPOUNDS ; *DECONTAMINATION ;
*ATMOSPHERIC DIFFUSION ; *MAXIMUM PERMISSIBLE EXPOSURE ;
AQUATIC ORGANISMS ; CANADA ; FLAMMABILITY
REVIEW CLASSIFICATION: 02
(ENV)

0177075 *85-010490
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS,
CHLORINE
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84 (131)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0175109 *85-001241
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS:
ETHYLBENZENE,
ENV CANADA ENV PROTECTION SERVICE REPORT, FEB 84, (112)

NON US GOVT REPORT A DETAILED MANUAL ON ETHYLBENZENE SPILLS DEPICTS APPROPRIATE COUNTERMEASURES AND ASSESSES THEIR ENVIRONMENTAL IMPACT. PHYSICAL PROPERTY DATA, ENVIRONMENTAL CONCERNS, AND OTHER SUMMARY DATA ON ETHYLBENZENE ARE PROVIDED; ALSO COVERED ARE COMMERCE AND PRODUCTION, HANDLING AND COMPATIBILITY, CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, AND HUMAN HEALTH. (NUMEROUS DIAGRAMS, GRAPHS, REFERENCES, TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *BENZENE ; *CHEMICAL TRANSPORT ; *HEALTH,
ENV ; *MONITORING, ENV-CHEMICAL ; *RAIL TRANSPORTATION ;
*TANKER OPERATION ; DECONTAMINATION ; CANADA
REVIEW CLASSIFICATION: 02
(ENV)

0177605 *85-016067
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: FERRIC CHLORIDE,
ENV CANADA ENV PROTECTION SERVICE REPORT, AUG 84 (97)
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

0177073 *85-010486
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: HYDROGEN FLUORIDE AND HYDROFLUORIC ACID,
ENV CANADA ENV PROTECTION SERVICE REPORT, JUL 84 (130)

COMPREHENSIVE INFORMATION ON THE BEHAVIOR OF HYDROGEN FLUORIDE AND HYDROFLUORIC ACID IN THE ENVIRONMENT IS COMPILED TO AID IN SPILL CONTROL AND CLEANUP. PHYSICAL AND CHEMICAL DATA CONCERNING THESE COMPOUNDS ARE SUMMARIZED, AS IS THE PRODUCTION AND USE IN CANADA. SAMPLE CALCULATIONS ARE PRESENTED FOR ANALYZING COMPOUND BEHAVIOR AND DISSOLUTION IN WATER AND DIFFUSION IN AIR. RECOMMENDED EXPOSURE LIMITS AND SYMPTOMS OF EXPOSURE PERTAINING TO HUMAN HEALTH, AND ANIMAL TOXICOLOGY DATA ARE REPORTED. (NUMEROUS GRAPHS, REFERENCES, TABLES)

DESCRIPTORS: *HYDROGEN FLUORIDE ; *CHEMICAL SPILLS ; *DECONTAMINATION ; *ACIDS ; *ATMOSPHERIC DIFFUSION ; *LAKES ; CANADA ; AQUATIC ORGANISMS ; MAXIMUM PERMISSIBLE EXPOSURE
REVIEW CLASSIFICATION: 02
(ENV)

0175107 *85-001239
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: SULPHURIC ACID AND OLEUM
ENV CANADA ENV PROTECTION SERVICE REPORT, FEB 84 (141)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0175110 *85-001242
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: TOLUENE
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84, (113)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0175108 *85-001240
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS:
SULPHUR,
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84, (76)

NON US GOVT REPORT A DETAILED MANUAL ON SULFUR SPILLS DEPICTS APPROPRIATE COUNTERMEASURES AND ASSESSES THEIR ENVIRONMENTAL IMPACT. PHYSICAL PROPERTY DATA, ENVIRONMENTAL CONCERNS, AND OTHER SUMMARY DATA ARE PROVIDED; ALSO COVERED ARE COMMERCE AND PRODUCTION, HANDLING AND COMPATIBILITY, CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, AND HUMAN HEALTH. (NUMEROUS DIAGRAMS, TABLES, REFERENCES) (4 DIAGRAMS, 5 GRAPHS, NUREFERENCE, 5 TABLES,)

DESCRIPTORS: *CHEMICAL SPILLS ; *SULFUR ; *CHEMICAL TRANSPORT ; *HEALTH, ENV ; *MONITORING, ENV-CHEMICAL ; *RAIL TRANSPORTATION ; *TANKER OPERATION ; DECONTAMINATION ; CANADA
REVIEW CLASSIFICATION: 02
(ENV)

0177054 *85-010134
ETHYLENE
ENV CANADA ENV PROTECTION SERVICE REPORT, AUG 84 (65)
(ENV)

******** SEE SECTION III-A FOR MORE DETAIL ********

0178212 *85-016403
ETHYLENE DICHLORIDE/ETHYLENE GLYCOL SPILL IN A MAJOR WATER RESOURCE IN BRITISH COLUMBIA,
CHRISTIAN KENNETH L. ; MOOREHEAD WILLIAM P.
* J ENV HEALTH, JAN-FEB 85, V47, N4, P192(5)

JOURNAL ARTICLE IN MARCH 1982, A CANADIAN NAT'L RAILWAY TRAIN CARRYING HAZARDOUS CHEMICALS DERAILED NEAR BLUE RIVER IN BRITISH COLUMBIA. SIGNIFICANT QUANTITIES OF ETHYLENE DICHLORIDE AND ETHYLENE GLYCOL WERE RELEASED INTO THE NORTH THOMPSON RIVER, A MAJOR WATER SUPPLY SOURCE IN THE PROVINCE. THE LOCAL PUBLIC HEALTH AUTHORITY'S ROLE IN RESPONSE TO THE SPILL IS DISCUSSED AS IT RELATES TO THE POTENTIAL THREAT TO DOMESTIC WATER SUPPLIES. (15 REFERENCES, 4 TABLES,)

DESCRIPTORS: *BRITISH COLUMBIA ; *CHEMICAL SPILLS ; *RIVERS ; *WATER, DRINKING ; *ETHYLENE ; *ENV ACTION-NON U S ; *MONITORING, ENV-WATER ; CONTAMINATION INCIDENTS
REVIEW CLASSIFICATION: 02
(ENV)

1139475 DE85011855/XAB
Evaluation of Source Strength and Dispersion Model Predictions with Data from Large Nitrogen Tetroxide Field Experiments
McRae, T. G.
Lawrence Livermore National Lab., CA.
Corp. Source Codes: 068147000; 9513035
Sponsor: Department of Energy, Washington, DC.
Report No.: UCRL-91402; CONF-8504135-1
Apr 85 23p
15. international technical meeting on air pollution modeling and it's application, St. Louis, MO, USA, 15 Apr 1985.
Languages: English Document Type: Conference proceeding
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8520; NSA1000
Country of Publication: United States
Contract No.: W-7405-ENG-48

A series of large scale nitrogen tetroxide spill tests were conducted to determine the source strength characteristics and heavy-gas dispersion aspects of large N sub 2 O sub 4 spills. The source strength and downwind dispersion results of two of the spills were used to evaluate several source strength and Gaussian dispersion models. It was concluded that: the internal energy heat source is a major contributor to the source strength; that source strength models need improvement; that formation of a dense HNO sub 3 mist may account for much of the downwind mass transport of large N sub 2 O sub 4 spills and that all models evaluated underpredict downwind gas concentrations. 34 refs., 4 figs., 7 tabs. (ERA citation 10:032149)

Descriptors: *Nitrogen Oxides; Aerosols; Boundary Layers; Diffusion; Earth Atmosphere; Evaporation; Experimental Data; Gauss Function; *Mathematical Models; Nitric Acid; Temperature Effects; Wind
Identifiers: ERDA/500200; *Air pollution; *Chemical spills; *Hazardous materials; *Gaussion plume models; *Nitrogen dioxide; NTISDE
Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering—Civil Engineering); 68A (Environmental Pollution and Control—Air Pollution and Control)
(NTIS)

0313609 EIM8508-045289

FIRST THOUGHTS ON SOME OF THE WIDER QUESTIONS RAISED BY BHOPAL.

Kletz, Trevor A.
Loughborough Univ of Technology, Dep of Chemical Engineering, Loughborough, Engl

Conference Title: 1985 Spring National Meeting and Petro Expo '85 - American Institute of Chemical Engineers.
Conference Location: Houston, TX, USA Conference Date: 1985 Mar 24-28
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1985 Spring. Publ by AIChE, New York, NY, USA Pap 72a, 6p 1985
CODEN: ACENC9
E.I. Conference No.: 06737
Language: English

On December 3, 1984, a leak of over 25 tons of toxic methyl isocyanate from a chemical plant in Bhopal, India, killed over 2500 people. Some of the wider issues of this disaster are commented upon: the need for inherently safer chemical plants; the layout of chemical plants; emergency planning; hazard and operability studies; maintaining and testing protective equipment; joint ownership; and education of chemical engineers. 12 refs.

Descriptors: *CHEMICAL PLANTS--*Accident Prevention; HAZARDOUS MATERIALS ENGINEERING EDUCATION; MAINTENANCE
Identifiers: METHYL ISOCYANATE; BHOPAL ACCIDENT; HAZARD AND OPERABILITY STUDY; EMERGENCY PLANNING
Classification Codes: 802 (Chemical Apparatus & Plants); 402 (Buildings & Towers); 914 (Safety Engineering); 901 (Engineering Profession); 913 (Production Planning & Control) 80 (CHEMICAL ENGINEERING); 40 (CIVIL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 90 (GENERAL ENGINEERING)

(EEM)

SI - PESTAB/78/2186
AU - Allen JR
AU - vanMiller JP
AD - Univ. Wisconsin Med. Cent., Dep. Pathol. & Reg. Primate Res. Cent., Madison, WI 53706
TI - **Health implications of 2,3,7,8- tetrachloro dibenzo- p-dioxin exposure in primates.**
SO - In: Pentachlorophenol. Rao, K. R., ed. (New York: Plenum Press): pp. 371-379 1977 (16 References)

CD - BOOKA
RN - 1746-01-6
EM - 7809
(CAS)

****** SEE SECTION IV-B FOR MORE DETAIL *******

0153519 *81-006312
HUMAN HEALTH EFFECTS FROM ACCIDENTAL RELEASE OF TETRACHLORODIBENZO-P-DIOXIN (TCDD) AT SEVESO, ITALY,
POCCHIARI, FRANCESCO ; SILANO VITTORIO ; ZAMPIERI ALFREDO
ISTITUTO SUPERIORE DI SANITA, ITALY,
PRESENTED AT NY ACADEMY OF SCIENCES HEALTH EFFECTS OF HALOGENATED AROMATIC HYDROCARBONS CONF, NY, JUN 24-27, 78, P311 (10) (ENV)

****** SEE SECTION IV-B FOR MORE DETAIL *******

0372185 EIM8603-018790
INVESTIGATION OF THE SAFETY ASPECTS IN THE USE OF HYDROGEN AS A GROUND TRANSPORTATION FUEL.
Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Hydrogen Energy Progress V, Proceedings of the 5th World Hydrogen Energy Conference.
Conference Location: Toronto, Ont, Can Conference Date: 1984 Jul 15-20
Sponsor: Int Assoc for Hydrogen Energy; Government of Ontario, Ont, Can; Government of Quebec, Que, Can; Hydrogen Industry Council; Natl Research Council of Canada, Can; et al
Source: Advances in Hydrogen Energy 4 v 4. Publ by Pergamon Press, New York, NY, USA and Oxford, Engl on behalf of Int Assoc for Hydrogen Energy p 1881-1892 1984
CODEN: AHENDB ISSN: 0276-2412 ISBN: 0-08-030953-4
E.I. Conference No.: 07500
Language: English

There are numerous suggestions for the use of hydrogen in energy systems, particularly in transportaion systems. While economic factors predominate, safety aspects are an important issue particularly as hydrogen fuel would be used in close proximity with the general public. This paper is based on the work carried out by Chemetics International Company, on behalf of the National Research Council. Potential systems for the transmission, storage,

distribution, refuelling and in-vehicle storage were selected. Schematic designs were developed and each subjected to the Hazard Identification procedure known as 'Hazard & Operability Studies. ' This paper outlines the strategy, the Hazard Identification approach and the results achieved with particular reference to an LH//2 refuelling station. An outline is given of some of the conclusions and recommendations including the creation of a National Hydrogen Safety Committee. (Edited author abstract) Refs.

Descriptors: *HYDROGEN FUELS—*Safe Handling; HAZARDOUS MATERIALS—Transportation; ENERGY STORAGE
Identifiers: GROUND TRANSPORTATION; HAZARD IDENTIFICATION; LIQUID HYDROGEN REFUELLING STATION
Classification Codes: 521 (Combustion & Fuels); 523 (Liquid Fuels); 914 (Safety Engineering); 914 (Safety Engineering); 804 (Chemical Products) 52 (FUEL TECHNOLOGY); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)
(EEM)

0163347 *83-002151
LABORATORY STUDY OF SULFURIC ACID SPILL CHARACTERISTICS PERTAINING TO MARITIME ACCIDENTS,
TANG, IGNATIUS N. ; WONG WING T.; MUNKELWITZ HARRY R.; FLESSNER MICHAEL F.
US BROOKHAVEN NATL LAB, NY,
* ENV SCIENCE & TECHNOLOGY, SEP 82, V16, N9, P587 (7)

TECHNICAL REPORT AN ACID SPILL SCENARIO FOR SULFURIC ACID AND OLEUMS IS PRESENTED. CONCENTRATED SULFURIC ACID AND OLEUMS ARE TRANSPORTED THROUGHOUT THE U.S. AND INTERNATIONAL WATERS. AN ACID SPILL COULD MEAN EXTREME CONSEQUENCES FOR HUMANS AND THE ENVIRONMENT. SEVERAL ACID SPILL SCENARIOS ARE DESCRIBED AND THE RESULTS FROM LAB EXPERIMENTS THAT SIMULATE THE MOST IMPORTANT TYPES OF SPILLS ARE COMPARED. (1 DIAGRAM, 5 GRAPHS, 2 PHOTOS, 15 REFERENCES, 1 TABLE)

DESCRIPTORS: *SULFURIC ACID ; *CHEMICAL SPILLS ; *TRANSPORTATION ACCIDENTS ; *MATHEMATIC MODELS;M-CHEMICAL ; *PARTICULATE SIZE ; MATHEMATIC MODELS;M-AIR
REVIEW CLASSIFICATION: 02
(ENV)

95067095 CA: 95(8)67095q CONFERENCE PROCEEDING
Monitoring a chlorine spill
AUTHOR(S): Lane, D. A.; Thomson, B. A.
LOCATION: SCIEX INC., Thornhill, ON, Can., L3T 1P2
JOURNAL: Proc. Int. Tech. Conf. Toxic Air Contam.
EDITOR: McGovern, John J (Ed) DATE: 1981 PAGES: 141-55 CODEN: 45QNA4
LANGUAGE: English MEETING DATE: 80 PUBLISHER: APCA, Pittsburgh, Pa
(CA)

****** SEE SECTION III-A FOR MORE DETAIL ******

TITLE: Multinationalsand Health:Reflections on theSeveso Catastrophe.
AUTHOR: Laporte, Joan-Ramon.
SOURCE: International Journal of Health Services, Vol. 8, No. 4, 1978. 619-632.
(LC)

****** THIS ENTRY ALSO APPEARS IN SECTION IV-B ******

0095609 EIM8304-022820
PCB EQUIPMENT INVENTORY AND MANAGEMENT PLAN FOR STATE OF CALIFORNIA FACILITIES.
Woodyard, John P.; Hypnarowski, Paul; Tappa, Jerry
SCS Eng Inc, Long Beach, Calif, USA
Conference Title: Proceedings: 1981 PCB Seminar.
Conference Location: Dallas, Tex, USA Conference Date: 1981 Dec 1-3
Sponsor: EPRI, Palo Alto, Calif, USA
Source: Electric Power Research Institute (Report) EPRI EL 2572. Publ by EPRI, Palo Alto, Calif, USA p 3. 65-3. 90 1982
CODEN: ERELDH
E.I. Conference No.: 01691
Language: English
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

1183702 PB86-162260/XAB
Perception of Threat by a Noxious Gas Accident and the Reported Coping Style (Perception av Hotec fran Gasolyckan i Karlskoga och Rapporterad Handlingsstrategi) [Chemical covered: Oleum]
Shalit, B.
Foersvarets Forskningsanstalt, Stockholm (Sweden).
Corp. Source Codes: 063330000
report No.: FOA-C-50036-H3
Jan 86 43p.
Summary in Swedish.
Languages: English
NTIS Prices: PC E03/MF E01
Country of Publication: Sweden
(NTIS)

******** SEE SECTION II-D FOR MORE DETAIL *********

182204 *86-041428
RESPONDING TO AMMONIUM NITRATE FERTILIZER EMERGENCIES,
GREINER, MAURICE L. J. R. SIMPLOT CO, ID,
FERTILIZER INST ENV SYM, KISSIMMEE, FL, OCT 24-26, 84, P59(21)

CONF PAPER: AMMONIUM NITRATE FERTILIZER DOES NOT EXPLODE WHEN CONTACTED BY FLAME, BUT BEGINS TO MELT AT ABOUT 330:DEGREEF. THE FIRST REAL DANGER IN AN AMMONIUM NITRATE EMERGENCY IS THE SHOCK AND HEAT SENSITIVITY OF THE MOLTEN MATERIAL. CONTAMINATION AND CONFINEMENT ARE ALSO A MATTER OF CONCERN. FIRE CONTROL TECHNIQUES AND ENVIRONMENTAL PROTECTION MEASURES ARE IDENTIFIED.

DESCRIPTORS: *AMMONIUM COMPOUNDS ; *FERTILIZER RESIDUES ; *CHEMICAL SPILLS ; *FIRES ; *CONTAMINATION INCIDENTS ; *EXPLOSIONS ; *NITRATES ; DUS DECONTAMINATION
REVIEW CLASSIFICATION: 02
(ENV)

0260160 EIM8412-091990

RISK-BASED ANALYSIS OF A PETROLEUM REFINERY.

Arendt, J. S.; Campbell, D. J.; Casada, M. L.; Lorenzo, D. K.
JBF Associates Inc, Knoxville, Tenn, USA
Conference Title: American Institute of Chemical Engineers, 1984 Winter National Meeting (Preprints).
Conference Location: Atlanta, Ga, USA Conference Date: 1984 Mar 11-14
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1984 Winter. Publ by AIChE, New York, NY, USA Pap 43e, 24p 1984
CODEN: ACENC9
E.I. Conference No.: 05076
Language: English

Descriptors: *PETROLEUM REFINERIES--*Accident Prevention
Identifiers: CHEMICAL ENGINEERING; INDUSTRIAL SAFETY; RISK ASSESSMENTS; RELIABILITY ENGINEERING STUDIES; PROCESS INDUSTRIES; PLANT PRODUCTIVITY; SAFETY IMPROVEMENTS; PLANT AVAILABILITY
Classification Codes: 513 (Petroleum Refining); 914 (Safety Engineering); 911 (Industrial Economics); 922 (Statistical Methods) 51 (PETROLEUM ENGINEERING); 91 (ENGINEERING MANAGEMENT); 92 (ENGINEERING MATHEMATICS)
(EEM)

0385654 EIM8605-032259

SAFETY OF HYDROGEN AS A GROUND TRANSPORTATION FUEL.

Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Cryogenic Processes and Equipment - 1984. (Presented at The Fifth Intersociety Cryogenics Symposium, The Winter Annual Meeting of The American Society of Mechanical Engineers.)
Conference Location: New Orleans, LA, USA Conference Date: 1984 Dec 9-14
Sponsor: ASME, Cryogenic Committee, New York, NY, USA; ASME, Cryogenic Heat Transfer Committee, New York, NY, USA; AIChE, Cryogenic Committee, New York, NY, USA; Int Inst of Refrigeration, Paris, Fr
Source: Publ by ASME, New York, NY, USA p 123-129 1984
E.I. Conference No.: 05854
Language: English

This paper is based on work carried out for the Canadian National Research Council. Potential systems for the transmission, storage, distribution, refuelling, and in-vehicle storage were selected. Schematic designs were developed and each subjected to the hazard identification procedure known as Hazard & Operability Studies. This paper outlines the strategy, the hazard identification approach and the results achieved with particular reference to an LH//2 refuelling station. An outline is given of some of the conclusions and recommendations, including the creation of a National Hydrogen Safety Committee. (Author abstract) 6 refs.

Descriptors: *HYDROGEN FUELS--*Safe Handling; AUTOMOTIVE FUELS--Safety Codes; LOW TEMPERATURE ENGINEERING--Operations Research
Identifiers: HAZARD IDENTIFICATION APPROACH; LIQUID-HYDROGEN FILLING STATION; ONBOARD STORAGE; CANADIAN HYDROGEN SAFETY COMMITTEE; SITE SELECTION
Classification Codes: 521 (Combustion & Fuels); 522 (Gas Fuels); 523 (Liquid Fuels); 644 (Refrigeration & Cryogenics); 901 (Engineering Profession) 52 (FUEL TECHNOLOGY); 64 (HEAT & THERMODYNAMICS); 90 (GENERAL ENGINEERING)

(EEM)

0324556 EIM8509-056236

SAFETY OF NATURAL GAS RETAIL STORAGE, REFUELING AND USE IN ROAD VEHICLES.

Hallett, Patrick H.; Heenan, J.
Transport Canada, Can

Conference Title: Proceedings of the Twenty-Second Automotive Technology Development Contractors' Coordination Meeting.
Conference Location: Dearborn, MI, USA Conference Date: 1984 Oct 29-Nov 2
Sponsor: DOE, Washington, DC, USA
Source: Proceedings - Society of Automotive Engineers P-155. Publ by SAE, Warrendale, PA, USA p 81-88 1985
CODEN: PSOED4 ISBN: 0-89883-716-2
E.I. Conference No.: 06858
Language: English

This paper reports briefly the methodology and the results of an investigation into the safety of natural gas distribution, storage and refuelling road vehicles under different configurations. The hazard identification technique used, known as 'Hazard and Operability Study', exposes various hazards, assesses them and provides appropriate recommendations to eliminate, contain or control them. Established procedures for fast-fill and slow-fill systems were examined. In addition, newly developed absorption systems were reviewed.

Descriptors: *NATURAL GAS—*Safe Handling; VEHICLES—Fuels; GAS STORAGE
Identifiers: NATURAL GAS DISTRIBUTION SAFETY; COMPRESSED NATURAL GAS FAST-FILL SYSTEM; SLOW-FILL SYSTEM; ABSORPTION SYSTEMS; HAZARD IDENTIFICATION TECHNIQUE; HAZARD AND OPERABILITY STUDY
Classification Codes: 512 (Petroleum & Related Deposits); 522 (Gas Fuels); 914 (Safety Engineering); 432 (Highway Transportation) 51 (PETROLEUM ENGINEERING); 52 (FUEL TECHNOLOGY); 91 (ENGINEERING MANAGEMENT); 43 (TRANSPORTATION)
(EEM)

TITLE: Seveso: Lessons from an Escape.
SOURCE: Economist, Vol. 267, June 17, 1978: 101-102, 104-106, 108.
(LC)

****** THIS ENTRY ALSO APPEARS IN SECTION III-A ******

TITLE: Seveso: The Questions Persist Where Dioxin Created a Wasteland.
AUTHOR: Walsh, John.
* SOURCE: Science, Vol. 197, Sept. 9, 1977: 1064-1067.
(LC)

****** THIS ENTRY ALSO APPEARS IN SECTION III-A ******

I. HAZARD IDENTIFICATION

B. MODELLING:

0180185 *85-029358
AAR'S INDUSTRIAL CHEMICAL ACCIDENT RESPONSE INFORMATION SYSTEM,
MEIER G. E.
ASSN OF AMERICAN RAILROADS, DC,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P172(12) (ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0214379 EIM8406-046209
AIR QUALITY MODELING OF CHEMICAL SPILLS: DETERMINATION OF THERMOPHYSICAL PROPERTIES OF CHEMICALS NOT INCLUDED IN THE DATA BASE OF THE SHELL SPILLS MODEL.
Kricks, R. J.; Pan, S.; Minich, T.
Enviroplan Inc, West Orange, NJ, USA
Conference Title: Proceedings 76th APCA Annual Meeting.
Conference Location: Atlanta, Ga, USA Conference Date: 1983 Jun 19-24
Sponsor: APCA, Pittsburgh, Pa, USA
Source: Proceedings, Annual Meeting - Air Pollution Control Association 76th v 2. Publ by APCA, Pittsburgh, Pa, USA 83-26. 7, 16p 1983
CODEN: PRAPAP ISSN: 0099-4081
E.I. Conference No.: 04202
Language: English

Descriptors: *WATER POLLUTION--*Oil Spills
Identifiers: ACCIDENTAL CHEMICAL RELEASES; COMPUTER MODEL NEED; IMPACT ASSESSMENT; THERMOPHYSICAL PROPERTY PARAMETERS; CHEMICAL COMPOUND DATA INPUT; EXTENSIVE LITERATURE REVIEWS; MOLECULAR WEIGHT; NORMAL BOILING POINT; CRITICAL TEMPERATURE; CRITICAL PRESSURE/VOLUME; GAS DENSITY CONSTANTS
Classification Codes: 453 (Water Pollution); 451 (Air Pollution)
45 (POLLUTION & SANITARY ENGINEERING)
(EEM)

0214380 EIM8406-046210
AIR QUALITY MODELING OF CHEMICAL SPILLS: SENSITIVITY ANALYSES OF THERMOPHYSICAL PROPERTY PARAMETERS USED AS INPUT TO THE SHELL SPILLS MODEL.
Pan, S. C.; Kricks, R. J.; Minnich, T. R.
Enviroplan Inc, West Orange, NJ, USA

Conference Title: Proceedings 76th APCA Annual Meeting.
Conference Location: Atlanta, Ga, USA Conference Date: 1983 Jun 19-24
Sponsor: AP
CA, Pittsburgh, Pa, USA
Source: Proceedings, Annual Meeting - Air Pollution Control Association 76th v 2. Publ by APCA, Pittsburgh, Pa, USA 83-26. 8, 16p 1983
CODEN: PRAPAP ISSN: 0099-4081
E.I. Conference No.: 04202
Language: English

Descriptors: *WATER POLLUTION--*Oil Spills
Identifiers: CRITICAL TEMPERATURE; NORMAL BOILING POINT; CRITICAL PRESSURE; CRITICAL VOLUME; MOLECULAR WEIGHT; VAPOR PRESSURE CONSTANTS; GAS DENSITY CONSTANTS; SATURATED LIQUID ENTHALPY; LIQUID SURFACE TENSION; LIQUID VISCOSITY; SCREENING ANALYSES
Classification Codes: 453 (Water Pollution); 451 (Air Pollution)
45 (POLLUTION & SANITARY ENGINEERING)
(EEM)

0148897 *81-001896
ASSESSMENT OF THE POTENTIAL BEHAVIOR OF AN ACCIDENTAL SHORT-DURATION RELEASE OF GASES AND AEROSOLS,
CAMERUCCI, C. ; BRAMATI L.; FRANCIOTI A.; IOANNILLI E.
ENEL, ROME,
PRESENTED AT CEC RADIOACTIVE RELEASE & DISPERSAL IN HYPOTHETICAL REACTOR ACCIDENT SEMINAR, DENMARK, APR 22-25, 80, V2, P1007 (14)

TECHNICAL FEATURE A MATHEMATICAL MODEL DEVELOPED TO ANALYZE THE BEHAVIOR OF POLLUTANT CLOUDS IS PRESENTED. THE MODEL WAS DESIGNED BASED ON MONITORING DATA GATHERED DURING THE 1976 CHEMICAL CLOUD ACCIDENT IN SEVESO, ITALY. THE MODEL MAY BE APPLIED TO THE STUDY OF RADIOACTIVE CLOUD BEHAVIOR RESULTING FROM A HYPOTHETICAL ACCIDENTAL RELEASE OF RADIOACTIVITY. THE MODEL APPLIES TO SHORT-TERM RELEASES. METEOROLOGICAL DATA THAT ARE NEEDED TO OPERATE THE MODEL ARE DISCUSSED. (4 GRAPHS, 1 MAP, 2 REFERENCES, 1 TABLE)

DESCRIPTORS: *RADIATION, ATOMIC-DOSES ; *ATMOSPHERIC DIFFUSION ; *AEROSOLS ; *MATHEMATIC MODELS-AIR ; *WINDS ; MONITORING, ENV-AIR ; ITALY CONF PAPER
REVIEW CLASSIFICATION: 14
(ENV)

0171012 84-002921
THE CHEMICAL ACCIDENT AT SEVESO (ITALY): STATISTICAL ANALYSIS IN REGIONS OF LOW CONTAMINATION ,
BELLI, G. ; BRESSI G.; CERLESI S.; RATTI S. P.
INST TECNICO INDUSTRIALE PAVIA, ITALY,
* CHEMOSPHERE, 1983, V12, N4-5, P517 (5)

JOURNAL ARTICLE A NORMALIZED METHODOLOGY IS DEVELOPED FOR ALLOWING A SIGNIFICANT STATISTICAL EVALUATION OF THE CHEMICAL CONTAMINANT DISTRIBUTION IN LIGHTLY POLLUTED REGIONS. THE METHODOLOGY IS APPLIED TO THE CHEMICAL SPILL AT SEVESO, ITALY. THE POLLUTION ANALYSIS IN REGIONS OF LOW CONTAMINATION IS FOUND TO BE MORE SENSITIVE TO THE MECHANISM RESPONSIBLE FOR THE CONTAMINANT DEPOSITION IN A GIVEN POINT THAN IN REGIONS OF HIGH POLLUTION. (4 GRAPHS, 4 REFERENCES, 2 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *ITALY ; *MATHEMATIC MODELS-CHEMICAL ; *DIOXINS ; *POLLUTION FORECASTING
REVIEW CLASSIFICATION: 02
(ENV)

0173169 *84-005078
COMPARISON OF CONVENTIONAL CHEMICAL SPILL AIR AND WATER DISPERSION MODELS,
ALP, E. ; PORTELLI R.V.; MITCHELL A.; GUERIN S.G.; DOHERTY C.
CONCORD SCIENTIFIC CORP,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P9 (26)

CONF PAPER ENV. CANADA SPONSORED THE PRODUCTION OF MANUALS CONTAINING TECHNICAL INFORMATION FOR PROBLEM SPILLS (TIPS), IN WHICH NOMOGRAMS PREDICT CHEMICAL CONCENTRATIONS AWAY FROM SPILL SITES. TWO ESTABLISHED COMPUTERIZED AIR DISPERSION MODELLING SYSTEMS FOR CHEMICAL SPILLS ARE COMPARED WITH TIPS. HACS, DEVELOPED BY USCG, AND SPILLS, GENERATED BY SHELL OIL CO., ARE BASED ON CONVENTIONAL GAUSSIAN DIFFUSION FORMULATIONS. THE PERFORMANCE OF THESE MODELS ARE COMPARED WITH ONE ANOTHER FOR ANALYSIS OF BENZENE, CHLORINE, PROPYLENE, AND VINYL CHLORIDE SPILLS. PREDICTIONS OF HACS AND TIPS MODELS ARE COMPARED WITH FIELD DATA FROM CONTROLLED LNG SPILLS. AGREEMENT AMONG THE AIR DISPERSION COMPONENTS IS WITHIN A FACTOR OF TWO OR BETTER. WATER DISPERSION RESULTS ARE ALSO EXAMINED. (5 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *MATHEMATIC MODELS-CHEMICAL ; *ATMOSPHERIC DIFFUSION ; *WATER POLLUTION EFFECTS ; *VAPORIZATION ; *CHLORINE ; *BENZENE ; *VINYL CHLORIDES ; LIQUEFIED NATURAL GAS ; DISSIPATION RATES ; TETRAETHYL LEAD ; PROPYLENE

REVIEW CLASSIFICATION: 02
(ENV)

692000 PB-289 392/3

Computer Model for Predicting Pollution in the Missouri

(Completion rept. 1 Oct 77-30 Sep 78)

Liu, Henry ; Cheng, Hung-Darh
Missouri Univ.-Columbia. Dept. of Civil Engineering.

Sponsor: Office of Water Research and Technology, Washington, DC.
Report No.: W79-01905; OWRT-A-103-MO(2)
15 Nov 78 105p
Languages: English
NTIS Prices: PC A06/MF A01 Journal Announcement: GRAI7908
Contract No.: DI-14-34-0001-8027; OWRT-A-103-MO

Whenever there is an accidental spill of hazardous chemicals or radioactive materials into any river, it is vitally important to be able to issue an immediate forecast of the arrival time and peak concentration of a pollutant at each downstream city, to enable water users downstream to take effective precaution measures. Adequate forecast of this type was not possible in the past because of the lack of a proper model to predict one-dimensional dispersion in natural streams. This study resulted in the development of an improved model. The new model is a modified Fickian model which uses a time-dependent dispersion coefficient, a time-scale much greater than the Fischer time-scale, and a Pearson-Type-III distribution of concentration.

Descriptors: *Hazardous materials; *Accident prevention; *Water pollution ; *Rivers; Mathematical models; Dispersing; Forecasting; Concentration(Composition); Open channel flow; Turbulent diffusion; One dimensional flow; Radioactive materials; Mixing; Time; Correlation; Curve fitting; Field tests; Missouri

Identifiers: Model studies; Spills; Tracer studies; NTISDIOWRT

Section Headings: 8H (Earth Sciences and Oceanography—Hydrology and Limnology); 13B (Mechanical, Industrial, Civil, and Marine Engineering—Civil Engineering); 68D (Environmental Pollution and Control—Water Pollution and Control); 68F (Environmental Pollution and Control—Radiation Pollution and Control); 48G (Natural Resources and Earth Sciences—Hydrology and Limnology)

(NTIS)

1188066 DE86006998/XAB

Desert Tortoise Series Data Report: 1983 Pressurized Ammonia Spills

Goldwire, H. C. ; McRae, T. G. ; Johnson, G. W. ; Hipple, D. L. ; Koopman, R. P.

Lawrence Livermore National Lab., CA.

Corp. Source Codes: 068147000; 9513035

Sponsor: Department of Energy, Washington, DC.

Report No.: UCID-20562

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Languages: English

NTIS Prices: PC A11/MF A01 Journal Announcement: GRAI8613; NSA1100

Country of Publication: United States

Contract No.: W-7405-ENG-48

A series of four pressurized ammonia spills up to 60 m exp 3 in size were performed at Frenchman Flat in Nevada as a part of a joint government-industry study. This data report presents a description of how the tests were conducted and the data from the tests. (ERA citation 11:020912)

Descriptors: *Ammonia; *Plumes; Air Pollution; Arid Lands; Chemical Spills; Diffusion; Environmental Impacts; Environmental Transport; Mathematical Models; Meteorology; Nevada; Risk Assessment; Trajectories

Identifiers: ERDA/500200; ERDA/510200; NTISDE

Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering—Civil Engineering); 68A (Environmental Pollution and Control—Air Pollution and Control)

(NTIS)

0158396 82-004151

DETECTION AND IMPACT PREDICTION OF HAZARDOUS SUBSTANCES RELEASED TO THE ATMOSPHERE,

PICKETT, E. E. ; WHITING R. G.; KOCCHIU H. L.
UNIV OF TORONTO, CANADA,
SCIENCE OF THE TOTAL ENV, APR 82, V23, P141 (9)

TECHNICAL REPORT A PROCEDURE THAT CAN BE USED IN EMERGENCY SITUATIONS TO DETECT, TRACK, AND PREDICT THE TRAJECTORY OF ESCAPED HAZARDOUS SUBSTANCES RELEASED TO THE ATMOSPHERE IS PRESENTED. THE PROBABILITY OF SUCH ACCIDENTS OCCURRING HAS INCREASED RECENTLY DUE TO INCREASING NUMBERS OF NUCLEAR REACTORS, CHEMICAL PLANTS, AND TRANSPORTATION AND STORAGE OF HAZARDOUS MATERIALS OVER WIDER GEOGRAPHICAL AREAS. APPLICATION OF THE PROCEDURE IS SIMULATED. (2 GRAPHS, 4 REFERENCES, 1 TABLE)

DESCRIPTORS: *POLLUTION FORECASTING ;*MATHEMATIC MODELS-AIR ; *CHEMICAL SPILLS ; *RADIATION, ATOMIC-DOSES ; *AEROSOLS ; DECISION MAKING ; MONITORING, ENV-AIR
REVIEW CLASSIFICATION: 02
(ENV)

AN CA102(4):31715r
TI **Development and experimental verification of HACS models for chemical spills in waterways**
AU Colonna, G. R.; Dodge, Franklin T.; Morrow, Thomas B.; Buckingham, J. Christopher; Havens, Jerry A.
CS U. S. Coast Guard
LO New Orleans, LA 70130, USA
SO Hazard. Mater. Spills Conf. Proc., Prev., Behav., Control Cleanup Spills Waste Sites, 286-93. Edited by: Ludwigson, John. Gov. Inst.: Rockville, Md.
SC 61-2 (Water)
DT C
CO 52OEAP
PY 1984
LA Eng
AB Models for the U.S. Coast Guard Hazard Assessment Computer System (HACS) are described and verification of models for continuous and instantaneous spills of sol. substances and of models for spreading, evapn., dissoln., and vapor dispersion of floating insol. materials on water is discussed.

KW spill chem water hazard model
IT Waters, natural
Waters, ocean
(chem. spills on, hazard assessment of, models for)
IT Process simulation, physicochemical
(of chem. spill behavior on water, hazard assessment in relation to)
IT Chemicals
(spills of, on waters, hazard assessment of, model for)
(CAS)

82-06993
Early Warning System for Toxic Waste Spills
* CHEM. ENG VOL. 89, NO. 15, p. 35,
Publ.Yr: 1982
Languages: ENGLISH
(POL)

****** SEE SECTION III-B FOR MORE DETAIL ******

139339 A
Emergency evacuation dispersion analysis for the chemical/petrochemical industry.
Laznow, J.; Mogolesko, F.J.; Lordi, N.J.; Sklarew, R.C.
M&L Environ. Consult. Form & Substance Inc.
Air Pollut. Control Assoc.
In: Proc. 74th APCA Annual Meeting, (Philadelphia, U.S.A.: Jun. 21-26, 1981), vol.1, Pittsburgh, U.S.A., Air Pollut. Control Assoc., 1981, Paper 81-1.1, 8p. , ISSN 0193-9688
Languages: English

An in plant minicomputer based facility was developed for predicting the hazardous atmospheric spread of accidental releases of toxic and explosive chemicals. This system is geared primarily as a practical tool to support emergency decision making for the chemical/petrochemical industry. Calculations of a flow field are made based on real time meteorological data and local terrain features. The dispersion methodology used in this system considers the complexities of a river like two fluid flow field, including vapour transport and dispersion in that field, which can be associated with accidental atmospheric releases of toxic and explosive heavier than air gaseous chemicals, normally stored under high pressure and/or low temperature. (from authors' abstract)

Descriptors: wind; air pollution
Section Heading Codes: A5
(FLU)

0281938 EIM8503-013618
EMERGENCY RESPONSE ATMOSPHERIC DISPERSION AND ASSESSMENT SYSTEM.
Roffman, Amiram; Chandler, Martin W.; Murawski, S. A.
Energy Impact Associates, Pittsburgh, PA, USA
Conference Title: Proceedings - 77th APCA Annual Meeting.
Conference Location: San Francisco, CA, USA Conference Date: 1984 Jun 24-29
Sponsor: APCA, Pittsburgh, PA, USA
Source: Proceedings, Annual Meeting - Air Pollution Control Association 77th v 1. Publ by APCA, Pittsburgh, PA, USA 84-14. 9, 15p 1984
CODEN: PRAPAP ISSN: 0099-4081
E.I. Conference No.: 06065
Language: English

The emergency Response Atmospheric Dispersion and Assessment System (ERADAS) is a real-time computerized management tool designed to provide the necessary information and evaluation in the event of emergency releases. The ERADAS consists of two key components: a Nuclear Emergency Evaluation System (NEES) that has been implemented at several nuclear plants as part of the Nuclear Regulatory Commission (NRC) requirements, and a Chemical Emergency Evaluation System (CEES) that has been developed for use in the event of hazardous chemical releases. Both the NEES and the CEES consists of three modules: sampling and activation, accidental release calculations and displays of results. This paper describes key features included in the NEES and the CEES. Examples of the systems displays are included to illustrate the type of output and information available and the utility and versatility of each application.

Descriptors: *HAZARDOUS MATERIALS—*Spills; NUCLEAR POWER PLANTS—Accidents; AIR POLLUTION—Control; METEOROLOGY; AERODYNAMICS
Identifiers: EMERGENCY RELEASES; NUCLEAR EMERGENCY EVALUATION SYSTEM; CHEMICAL EMERGENCY EVALUATION SYSTEM; ACCIDENTAL RELEASE CALCULATIONS; bDISPLAYS OF RESULTS; SAMPLING AND ACTIVATION
Classification Codes: 804 (Chemical Products); 914 (Safety Engineering); 622 (Radioactive Materials); 451 (Air Pollution); 443 (Meteorology) 80 (CHEMICAL ENGINEERING);91 (ENGINEERING MANAGEMENT); 62 (NUCLEAR TECHNOLOGY); 45 (POLLUTION & SANITARY ENGINEERING); 44 (WATER & WATERWORKS ENGINEERING)
(EEM)

0177076 *85-010493
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: CALCIUM OXIDE AND HYDROXIDE,
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84 (64)
(ENV)

****** SEE SECTION I-A FOR MORE DETAIL ******

0177605 *85-016067
ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: FERRIC CHLORIDE,
ENV CANADA ENV PROTECTION SERVICE REPORT, AUG 84 (97)

COMPREHENSIVE INFORMATION IS PROVIDED FOR SPILL SPECIALISTS IN DESIGNING COUNTERMEASURES FOR ACCIDENTAL RELEASES AND SPILLS OF FERRIC CHLORIDE. PHYSICAL AND CHEMICAL DATA CONCERNING THE COMPOUND ARE SUMMARIZED; ITS PRODUCTION AND USE IN CANADA IS SURVEYED. CONTAMINANT TRANSPORT IS DISCUSSED WITH REFERENCE TO LEAK NOMOGRAMS, DISPERSION IN AIR, AND BEHAVIOR IN WATER. FIRE CONCERNS AND RECOMMENDED HANDLING PROCEDURES FOR SPILLS ON LAND OR WATER ARE OUTLINED. HUMAN AND ANIMAL TOXICOLOGY DATA ARE ALSO INCLUDED. (NUMEROUS REFERENCES, TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *IRON COMPOUNDS ; *CHLORIDES ; *DECONTAMINATION ; *DIFFUSION ; *MAXIMUM PERMISSIBLE EXPOSURE ; AQUATIC ECOSYSTEMS ; CANADA ; ATMOSPHERIC DIFFUSION
REVIEW CLASSIFICATION: 02
(ENV)

0179353 85-024052
ESTIMATING EXPOSURE FROM A CHEMICAL SPILLED INTO A RIVER,
NEELY W. B. ; LUTZ R. W.
(DOW CHEMICAL CO, MI) AND,; (DOW CHEMICAL CO, ALBERTA),
* J HAZARDOUS MATERIALS, FEB 85, V10, N1, P33(9)

JOURNAL ARTICLE RISKS ASSOCIATED WITH EXPOSURE TO AN ACCIDENTAL CHEMICAL DISCHARGE TO A RIVER ARE ANALYZED. A MATHEMATIC MODEL DEPICTING CHEMICAL DISPERSION IN A RIVER SYSTEM IS DEVELOPED. THE DISPERSION EQUATIONS FOR PREDICTING EXPOSURE ARE VALIDATED USING DATA FROM A TRAIN DERAILMENT AND SUBSEQUENT CHEMICAL SPILL IN BRITISH COLUMBIA, CANADA. USING HYDROLOGICAL DATA ON A RIVER, REASONABLE ESTIMATIONS OF THE CONCENTRATIONS DOWNSTREAM FROM A SPILL SITE CAN BE DERIVED. (14 REFERENCES, 6 TABLES,)

DESCRIPTORS: *CHEMICAL SPILLS ; *RIVERS ; *CONTAMINATION INCIDENTS ; *BRITISH COLUMBIA ; *MATHEMATIC MODELS-CHEMICAL ; *DISSIPATION RATES ; TRANSPORTATION ACCIDENTS ; CHLORIDES
REVIEW CLASSIFICATION: 02
(ENV)

1139475 DE85011855/XAB
Evaluation of Source Strength and Dispersion Model Predictions with Data from Large Nitrogen Tetroxide Field Experiments
McRae, T. G.
Lawrence Livermore National Lab., CA.
Corp. Source Codes: 068147000; 9513035
Sponsor: Department of Energy, Washington, DC.
Report No.: UCRL-91402; CONF-8504135-1
Apr 85 23p
15. international technical meeting on air pollution modeling and it's application, St. Louis, MO, USA, 15 Apr 1985.
Languages: English Document Type: Conference proceeding
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8520; NSA1000
Country of Publication: United States
Contract No.: W-7405-ENG-48
(NTIS)

****** SEE SECTION I-A FOR MORE DETAIL ******

1146774 AD-A157 165/2/XAB
Evaluation of the Ocean Breeze/Dry Gulch Dispersion Model
(Environmental research papers)
Kunkel, B. A.
Air Force Geophysics Lab., Hanscom AFB, MA.
Corp. Source Codes: 054815000; 409578
Report No.: AFGL-TR-84-0313; AFGL-ERP-900
19 Nov 84 23p
Languages: English
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8523
Country of Publication: United States
Contract No.: 6670; 14

The Ocean Breeze-Dry Gulch (OB/DG) atmospheric dispersion model is used extensively by the USAF Air Weather Service for predicting the hazard zone resulting from an accidental toxic chemical spill. This model is an empirical and statistical model derived from the Ocean Breeze, Dry Gulch, and Prairie Grass experiments conducted in the late 50's and early 60's. the USAF Scientific Advisory Board recently recommended that the OB/DG model be replaced with a current state-of-the-art dispersion model. This report represents the first step toward evaluating the OB/DG model and finding a suitable replacement. The hazard distances computed from the OB/DG model for different meteorological conditions are compared with the hazard distances calculated with the Shell Oil co. SPILLS model and a modified version of the model. In the modified Shell model, the discrete Pasquill stability categories are replaced with a continuous stability parameter, and surface roughness is included as a factor in defining the rate of cloud growth. The OB/DG model agrees quite favorably with the modified Shell model except at low wind speeds where it predicts considerably lower distances. The Shell model calculates generally larger distances and much greater fluctuations with wind speed, and therefore does not agree as well with the OB/DG model. The similarity in output between the modified Shell model and the OB/DG model lends support to further consideration of this model as a possible replacement to the OB/DG model. (Author)

Descriptors: *Vapors; *Scattering; Accidents; Chemicals; Spilling; Mathematical models; Statistical analysis; Hazards; Meteorology; Clouds; Parameters; Stability; Wind velocity; Growth(General); Rates; Models; Surface roughness; Hazardous materials

Identifiers: *Ocean breeze/dry gulch model; *Chemical spills; *Air pollution; NTISDODXA

Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering—Civil Engineering); 68A (Environmental Pollution and Control—Air Pollution and Control)

(NTIS)

0173168 *84-005077

EVAPORATION RATES OF CHEMICAL SPILLS,

STIVER, WARREN ; MACKAY DONALD

UNIV OF TORONTO, CANADA

ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P1 (8)

CONF PAPER THE EVAPORATION RATE OF AN ACCIDENTALLY SPILLED CHEMICAL CAN BE USED TO ESTIMATE DOWNWIND AIR CONCENTRATIONS AND THE LIKELY DURATION OF THE EVAPORATION PERIOD. ANALYSIS OF EVAPORATION RATES CAN ALSO BE USEFUL IN SELECTING APPROPRIATE SPILL COUNTERMEASURES. METHODS OF CALCULATING SUCH RATES ARE OUTLINED. EXPERIMENTAL APPROACHES TO DISSIPATION RATE DETERMINATION ARE ALSO CONSIDERED. MAJOR DIFFICULTIES INHERENT IN COMMONLY EMPLOYED TECHNIQUES CONCERN THE QUANTIFICATION OF THE EVAPORATION MASS TRANSFER COEFFICIENT, AND TREATMENT OF SITUATIONS WHERE THE LIQUID IS PARTIALLY ABSORBED INTO SOILS OR SNOW. (2 GRAPHS, 6 REFERENCES, 1 TABLE)

DESCRIPTORS: *CHEMICAL SPILLS ; *EVAPORATION ; *DISSIPATION RATES ; *MATHEMATIC MODELS-CHEMICAL ; ATMOSPHERIC TEMPERATURE
REVIEW CLASSIFICATION: 02
(ENV)

1172726 DE86001905/XAB
Further Assessment of FEM3: A Numerical Model for the Dispersion of Heavy Gases over Complex Terrain
Chan, S. T. ; Ermak, D. L.
Lawrence Livermore National Lab., CA.
Corp. Source Codes: 068147000; 9513035
Sponsor: Department of Energy, Washington, DC.
Report No.: UCRL-92497; CONF-8511110-3
Oct 85 13p
JANNAF Safety and Environmental Protection Subcommittee meeting, Monterey, CA, USA, 4 Nov 1985.
Languages: English Document Type: Conference proceeding
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8607; NSA1100
Country of Publication: United States
Contract No.: W-7405-ENG-48

FEM3 is a three-dimensional numerical model for simulating the atmospheric dispersion of heavy gases over complex terrain. During the past few years, FEM3 has been assessed, using data from the Burro and Coyote series of LNG spill experiments conducted by LLNL at China Lake, California. In general, the model has been found to perform very well and it greatly complements the field experiments in enhancing our understanding of the phenomena associated with LNG vapor dispersion, including gravity spreading, heating from the ground surface, and terrain effects. In this paper, the FEM3 model is further applied to simulate the dispersion of nitrogen dioxide (NO_2) for one of the LLNL conducted nitrogen tetroxide (N_2O_4) spill tests and also to simulate the dispersion of propane gas for four of the refrigerated liquid propane

spills conducted by SHELL Research Limited at Maplin Sands. The main purpose of the NO sub 2 simulation is to demonstrate the heavy gas effects in this test and the latter simulations are for assessing the performance of the current model for simulating the dispersion of propane gas. 12 refs., 12 figs. (ERA citation 11:006240)

Descriptors: *Diffusion; *Gases; Chemical Spills; Complex Terrain; Computer Codes; Experimental Data; F Codes; Liquefied Natural Gas; Mathematical Models; Nitrogen Dioxide; Propane
Identifiers: ERDA/500200; Air pollution; NTISDE
Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 68A (Environmental Pollution and Control--Air Pollution and Control); 97R (Energy--Environmental Studies)
(NTIS)

0180196 *85-029370
LNG SPILL AND DISPERSION MODELLING,
ALP E. ; ALP S.; MATTHIAS C. H.; GUERIN S. G.; NAPIER D.; REID J.; PORTELLI R. V.
CONCORD SCIENTIFIC CORP, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P91(23)

CONF PAPER A SURVEY OF LNG USERS IN CANADA REVEALS A NEED FOR A PROVEN HEAVY GAS DISPERSION MODEL IN THE EVENT OF AN LNG SPILL. PHYSICOCHEMICAL PROPERTIES OF THE MATERIAL ARE CONSIDERED FOR INCLUSION IN A MODELING SCHEME. A LITERATURE SURVEY OF AVAILABLE DISPERSION MODELS IS SURVEYED. AN ADVANCED SIMILARITY MODEL WAS MODIFIED TO CREATE A SUITABLE COMPUTER PROGRAM. MODEL PREDICTIONS WERE FOUND TO BE SATISFACTORY WHEN COMPARED WITH EXPERIMENTAL DATA. (2 DIAGRAMS, 3 GRAPHS, 45 REFERENCES, 3 TABLES,)

DESCRIPTORS: *LIQUEFIED NATURAL GAS ; *CHEMICAL SPILLS ; *ATMOSPHERIC DIFFUSION ; *EVAPORATION ; *MATHEMATIC MODELS-NATURAL GAS ; *LITERATURE SURVEYS ; MATHEMATIC MODELS-AIR
REVIEW CLASSIFICATION: 02
(ENV)

0156366 *82-002188
THE MACGREGOR VINYL CHLORIDE SPILL: A PRACTICAL EXERCISE IN DISPERSION,
FRASER H. M.
ATMOSPHERIC ENV SERVICE, MANITOBA,
PRESENTED AT CANADAN METEOROLOGICAL & OCEANOGRAPHIC SOCIETY 15TH CONF, SASKATOON, MAY 27-29, 81, P61 (14)

TECHNICAL REPORT IN MARCH OF 1980, A TRAIN DERAILMENT IN MANITOBA SPILLED 70,000 L OF VINYL CHLORIDE MONOMER. A GROUND-BASED GAUSSIAN DISPERSION MODEL WAS APPLIED. ESTIMATES WERE MADE OF LEAKAGE RATE, SURFACE EVAPORATION, AND THE EFFECTS OF EARTH AND SNOW FOR 36 HOURS AFTER THE ACCIDENT. THESE ESTIMATES AND MODELS OF ATMOSPHERIC CONDITIONS AGREED WITH OBSERVATIONS AND MONITORING AVAILABLE. DIFFICULTIES INVOLVED IN WARNING RESIDENTS OF SUCH ACCIDENTS ARE DISCUSSED. (2 DIAGRAMS, 11 REFERENCES, 2 TABLES)

DESCRIPTORS: *VINYL CHLORIDES ; *CHEMICAL SPILLS ; *MATHEMATIC MODELS-CHEMICAL ; *SOIL ANALYSIS ; *AIR ANALYSIS ; *ATMOSPHERIC POLLUTANT DEPOSITION ; POLLUTION FORECASTING ; EMERGENCY PLANNING ; EVAPORATION ; CONF PAPER
REVIEW CLASSIFICATION: 02
(ENV)

0162679 *83-001509
MATHEMATICAL MODELLING OF CHEMICAL SPILLS ON LAND,
FLEISCHER MIGUEL T.
SHELL OIL CO, HOUSTON,
ECOLIBRIUM, FALL 82, V11, N4, P10 (4)

TECHNICAL REPORT SPILL, AN EVAPORATION/AIR DISPERSION COMPUTER MODEL, WAS DEVELOPED TO QUICKLY PREDICT THE AREA OF DANGEROUS CONCENTRATIONS IN A VAPOR CLOUD ARISING FROM THE SPILL OF A TOXIC MATERIAL ON LAND. EVAPORATION, MASS TRANSFER, AND ATMOSPHERIC DIFFUSION RATES OF A SPILLED CHEMICAL CAN BE CALCULATED. THE MODEL CAN PROVIDE NECESSARY INFORMATION TO ASSESS THE EXTENT OF HAZARD TO EMERGENCY RESPONSE TEAMS AND SURROUNDING COMMUNITIES. (1 GRAPH, 11 REFERENCES, 1 TABLE)

DESCRIPTORS: *CHEMICAL SPILLS ; *MATHEMATIC MODELS-CHEMICAL ; *EVAPORATION ; *ATMOSPHERIC DIFFUSION ; *MATHEMATIC MODELS-AIR ; CHEMICAL RESIDUES
REVIEW CLASSIFICATION: 02
(ENV)

041061 X (No Journal)
MATHEMATICAL MODELS PREDICT CONCENTRATION-TIME PROFILES RESULTING FROM CHEMICAL SPILL IN A RIVER.
NEELY, W.B., BLAU, G.E.; ALFREY, T.
DOW CHEMICAL CO., U.S.A.
* ENVIRONM. SCI. AND TECHNOL., VOL.10, NO.1, PP.72-6. %JANUARY, 1976<.,
Languages: English

WITH THE INCREASED USE OF THE NATION'S WATERWAYS FOR THE TRNASPORTATION OF MATERIALS, THERE IS AN INCREASE IN THE PROBABILITY OF SPILLS.
ONCE SUCH A SPILL HAS OCCURRED, THERE IS AN IMMEDIATE NEED TO PREDICT THE CONCENTRATION PROFILE OF THE CHEMICAL AS THE SPILL TRAVELS IN ORDER TO ASSESS THE IMPACT TO BOTH HUMANS AND THE ENVIRONMENT.
THIS PAPER DISCUSSES THE USE OF A MATHEMATICAL MODEL THAT HAS THIS PREDICTIVE CAPABILITY FOR COMMON SPILLS.
ALTHOUGH THE MODEL IS DERIVED FROM THE ASSUMPTION THAT THE CHEMICALS ARE COMPLETELY WATER SOLUBLE, IT IS ALSO USEFUL FOR PARTIALLY SOLUBLE MATERIALS.
THE CREDIBILITY OF THE MODEL IS DEMONSTRATED BY COMPARING THE CONCENTRATION PROFILE PREDICTED WITH THE ACTUAL PROFILES MEASURED IN TWO DIFFERENT INCIDENTS.

Descriptors: OIL POLLUTION; CHEMICAL SPILLS; RIVERS; CONCENTRATION-TIME PROFILES; MATHEMATICAL MODELS; DIFFUSION PROCESSES; COMPUTERISED ANALYSIS; CORRELATION OF PREDICTED AND MEASURED DATA; CHLOROFORM SPILLAGE; MISSISSIPPI RIVER
Section Heading Codes: X86A; X22:8; X147A
(FLU)

0023931 EIM8207-005160
METHODS FOR THE ESTIMATION OF THE EFFECTS OF ACCIDENTAL RELEASE OF LIQUEFIED GASES.
Rosak, J.; Skarka, J.
Chemoprojekt, Prague, Czech
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 3. Publ by Swiss Soc of Chem Ind, Basle, Switz p 15/1173-15/1182 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS—*Accident Prevention
Identifiers: CHEMICAL PLANTS; INFLAMMABLE VAPORS; INFLAMMABLE LIQUIDS; ACCIDENTAL RELEASE; LOWER EXPLOSION LIMIT; OVER PRESSURE; STATISTICAL MODEL ; INSTANTANEOUS GAS DISCHARGE; LIQUEFIED GASES; CLOUD DETONATION
Classification Codes: 802 (Chemical Apparatus & Plants); 931 (Applied Physics) 80 (CHEMICAL ENGINEERING); 93 (ENGINEERING PHYSICS)
(EEM)

0238971 EIM8409-070801
MODELING OF FIRE FOR RISK ASSESSMENT IN PETROCHEMICAL INDUSTRIES.
Hofmann, J.
Battelle-Inst e. V. , Frankfurt am Main, West Ger
Conference Title: Heavy Gas and Risk Assessment - 2, Proceedings of the 2nd Symposium.
Conference Location: Frankfurt am Main, West Ger Conference Date: 1982 May 25-26
Sponsor: Battelle-Inst e. V. , Frankfurt am Main, West Ger
Source: Heavy Gas and Risk Assessment 2 Publ by D. Reidel Publ Co, Dordrecht, Neth and Boston, Mass, USA p 249-260 1983
CODEN: HGRAE6 ISBN: 90-277-1594-7
E.I. Conference No.: 03800
Language: English

Descriptors: *PETROCHEMICAL PLANTS—*Accident Prevention
Identifiers: POTENTIAL HAZARD ASSESSMENT; CHEMICAL PLANTS; SAFETY MEASURES; PLANT PERSONNEL PROTECTION; ACCIDENTAL RELEASE CONSEQUENCES; TOXIC/INFLAMMABLE MATERIALS; MAJOR FIRE HAZARD; PROCESS PLANTS; FIRE MODELING REVIEW; LARGE-SCALE POOL FIRES; FLAME TILT
Classification Codes: 513 (Petroleum Refining); 802 (Chemical Apparatus & Plants) 51 (PETROLEUM ENGINEERING); 80 (CHEMICAL ENGINEERING)
(EEM)

0178634 *85-016431
PRELIMINARY WORST-CASE ACCIDENT ANALYSIS TO SUPPORT THE CONCEPTUAL DESIGN OF A POTENTIAL REPOSITORY IN TUFF (WASTE POLICIES AND PROGRAMS, HIGH-LEVEL WASTE),
JACKSON J. L. ; GRAM H. F.; HONG K. J.; PENDERGRASS A. M.; NG H. S.
US SANDIA NATL LABS, NM,
ANS/ET AL WASTE MANAGEMENT 84 CONF, TUCSON, MAR 11-15, 84, V1, P561(7)

CONF PAPER IN SUPPORT OF CONCEPTUAL RADIOACTIVE WASTE REPOSITORY DESIGN STUDIES AT THE NEVADA TEST SITE, A PRELIMINARY ANALYSIS WAS PERFORMED TO IDENTIFY EVENTS THAT COULD CAUSE RADIOLOGICAL RELEASES FROM SURFACE FACILITIES DURING SITE OPERATIONS. ACCIDENTAL RELEASES WERE MODELED AS SHORT-DURATION RELEASE PLUMES DISPERSED UNDER AVERAGE CLIMATIC CONDITIONS. ALL POSTULATED ACCIDENTS RESULT IN DOSES TO MEMBERS OF THE PUBLIC LOWER THAN THE 0.5 REM/ACCIDENT LIMIT SET BY NRC. FOR THOSE ACCIDENTS NOT INVOLVING BOTH FIRE AND BREACH OF CANISTERS, DOSES TO OPERATIONS PERSONNEL ARE WITHIN THE NRC LIMIT FOR ROUTINE OPERATIONS OF 5 REM/YEAR. (1 MAP, 18 REFERENCES, 3 TABLES,)

DESCRIPTORS: *NEVADA TEST SITE; *RADIOACTIVE WASTE DISPOSAL ; *RADIATION, ATOMIC-DOSES ; *NATURAL DISASTERS ; *TRANSPORTATION ACCIDENTS HEALTH SAFETY, OCCUPATIONAL

REVIEW CLASSIFICATION: 14

(ENV)

0041256 EIM8209-032871

RELEASE RATES OF HAZARDOUS CHEMICALS FROM A DAMAGED CARGO VESSEL.

Dodge, Franklin T.; Bowles, Edgar B.; White, Robert E.; Flessner, Michael F.
Southwest Res Inst, San Antonio, Tex, USA

Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA Conference Date: 1980 May 13-15
Sponsor: EPA, WAshington, DC, USA; US Coast Guard, Washington, DC, USA; Vanderbilt Univ, Nashville, Tenn, USA; Am Ind Hyg Assoc, Kansas City, Mo, USA; AIChE, New York, NY, USA; et al
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA p 381-385 1980
E.I. Conference No.: 00199
Language: English

Descriptors: *HAZARDOUS MATERIALS--*Spills

Identifiers: VENTING RATE MODELS; VOLATILE LIQUIDS; U. S. COAST GUARD; CHEMICAL HAZARD RESPONSE INFORMATION SYSTEMS; CARGO VESSELS; AIR INGESTION WATER INGESTION; COMPUTERIZED MODELS

Classification Codes: 451 (Air Pollution); 452 (Sewage & Industrial Wastes Treatment); 901 (Engineering Profession); 804 (Chemical Products) 671 (Naval Architecture); 723 (Computer Software) 45 (POLLUTION & SANITARY ENGINEERING); 90 (GENERAL ENGINEERING); 80 (CHEMICAL ENGINEERING); 67 (MARINE ENGINEERING); 72 (COMPUTERS & DATA PROCESSING)

(EEM)

AN CA102(2):11995d
TI **Revision and experimental verification of the hazard assessment computer system models for spreading, movement, dissolution, and dissipation of insoluble chemicals spilled onto water. Volume 1**
AU Dodge, F. T.; Park, J. T.; Buckingham, J. C.; Magott, R. J.
CS Southwest Res. Inst.
LO San Antonio, TX, USA
SO Report, USCG-D-35-83; Order No. AD-A140635, 356 pp. Avail. NTIS
From: Gov. Rep. Announce. Index (U. S.) 1984, 84(16), 140
SC 61-2 (Water)
DT T
PY 1983
LA Eng
AB Computerized models are developed to predict the spreading, movement, evapn., and dissoln. of floating slicks formed by accidental spills of insol. chem. Sep. models are developed for continuous and instantaneous spills. The waterway can be a river, channel, lake, or coastal water. The models emphasize the dynamics of the thick slick (i.e., the gravity-viscous spreading phase) since the thick slick contains nearly all the spilled chem. and represents the most prolonged hazard. Predictions of the spreading models are compared to results of instantaneous and continuous spill tests conducted in a large lab. basin and a lab. channel. The evapn. and dissoln. predictions are compared to wind-tunnel and wind-wave tunnel tests. Agreement of the models with the tests is generally good.
KW chem spill water body modeling
IT Water pollution
(by chem. spills, modeling of)
IT Waters, natural
Waters, ocean
(chem. spills on, behavior of, modeling of)
IT Accidents
(chem. spills, on water bodies, behavior of, modeling of)
IT Process simulation, physicochemical
(of chem. spill behavior on water bodies)
IT Chemicals
(spills, on water bodies, behavior of, modeling of)
(CAS)

0177100 *85-010699
THE ROLE OF MULTIMEDIA FATE MODELS IN CHEMICAL RISK ASSESSMENT (FATE OF CHEMICALS IN THE ENVIRONMENT),
ESCHENROEDER ALAN
ARTHUR D. LITTLE INC, MA,
ACS SYM SERIES 225, 1983, P89(16) ASSN REPORT

MATHEMATICAL MODELS FOR CHEMICALS MOVING THROUGH AIR, WATER, SOIL, AND BIOTA ARE RELATED TO METHODOLOGIES FOR ASSESSING HEALTH RISKS TO INDIVIDUALS OR ECOSYSTEMS EXPERIENCING ENVIRONMENTAL EXPOSURES. PROCEDURES FOR ASSESSING RISKS ARE TRACED FROM SOURCE TO RECEPTORS, AND THE APPLICATION OF MODELS TO THIS PROCESS IS DESCRIBED. ACUTE RISKS ARE DISTINGUISHED FROM CHRONIC RISKS IN THE CONTEXT OF ENVIRONMENTAL REGULATORY REQUIREMENTS. A TECHNIQUE FOR SELECTING AND ASSEMBLING MULTIMEDIA MODELS BASED ON RELEASE, ENVIRONMENTAL, AND RECEPTOR CHARACTERISTICS IS EXPLAINED. (22 REFERENCES,)

DESCRIPTORS: *CHEMICAL RESIDUES ; *MATHEMATIC MODELS-CHEMICAL ; *CHEMICAL SPILLS ; *AQUATIC ECOSYSTEMS ; *AIR POLLUTION INDICATORS ; DIFFUSION ; SOIL CHEMISTRY
REVIEW CLASSIFICATION: 02
(ENV)

0041993 EIM8209-033608
ROLE OF NUMERICAL SIMULATION IN ANALYSIS OF GROUND-WATER QUALITY PROBLEMS.
Konikow, L. F.
US Geol Surv, Reston, Va, USA
Conference Title: Quality of Groundwater, Proceedings of an International Symposium.
Conference Location: Noordwijkerhout, Neth Conference Date: 1981 Mar 23-27
Sponsor: Natl Inst for Water Supply, Voorburg, Neth; UNESCO, Paris, Fr; WHO, Geneva, Switz; Comm of the Eur Communities; Int Assoc of Hydrogeol, Arnhem, Neth; et al
Source: Studies in Environmental Science 17. Publ by Elsevier Sci Publ Co, Amsterdam, Neth and New York, NY, USA p 823-836 1981
CODEN: SENSDA ISBN: 0-444-42022-3
E.I. Conference No.: 00621
Language: English

Descriptors: *WATER POLLUTION--*Water Quality
Identifiers: TOXIC CHEMICAL HAZARDS; AQUIFER CONTAMINATION; GROUNDWATER CONTAMINATION PROBLEMS; DIGITAL SIMULATION MODELS; NONREACTIVE SOLUTE TRANSPORT AND DISPERSION SIMULATION; DECAY AND SORPTION PROCESSES; HYDRAULIC AND CHEMICAL SYSTEMS; INPUT DATA UNCERTAINTIES; GROUNDWATER SYSTEM MODELS; CONCEPTUAL MODEL EVALUATION; ALTERNATIVE STRESS SYSTEM RESPONSES

Classification Codes: 453 (Water Pollution); 444 (Water Resources); 723 (Computer Software); 921 (Applied Mathematics) 45 (POLLUTION & SANITARY ENGINEERING); 44 (WATER & WATERWORKS ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)
(EEM)

0180184 *85-029357
A SIMPLE MICRO-COMPUTER MODEL OF SHORT AND LONG TERM CHEMICAL SPILL BEHAVIOUR ON LAND,
PHYPER JOHN D. ; MACKAY DONALD
UNIV OF TORONTO, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P162(10)

CONF PAPER A RELATIVELY SIMPLE MODEL CAN BE USED TO ESTIMATE THE BEHAVIOR OF A CHEMICAL SPILLED ON SOIL. THE MODEL TREATS THE PROCESSES OF INFILTRATION INTO SOIL, INTERACTION WITH GROUNDWATER, SORPTION, EVAPORATION, DISSOLUTION, AND DEGRADING REACTIONS. THE EQUATIONS ARE GREATLY SIMPLIFIED BY BREAKING THE SPILL INTO FOUR DISTINCT TIME PERIODS. (1 DIAGRAM, 6 REFERENCES,)

DESCRIPTORS: *CHEMICAL SPILLS ; *MATHEMATIC MODELS-CHEMICAL ; *SOIL CONTAMINATION ; *INFILTRATION ; *GROUNDWATER ; EVAPORATION ; SORPTION
REVIEW CLASSIFICATION: 02
(ENV)

0173178 *84-005087
A SPILL HAZARD RANKING SYSTEM FOR CHEMICALS,
STIVER, WARREN ; MACKAY DONALD
UNIV OF TORONTO, CANADA
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P261 (6)

CONF PAPER RECENT TRAIN DERAILMENT EVENTS IN CANADA INVOLVING THE RELEASE OF CHEMICALS HAVE HEIGHTENED PUBLIC CONCERN ABOUT HAZARDOUS MATERIAL TRANSPORT. A SPILL HAZARD RANKING SYSTEM FOR CHEMICALS IS PROPOSED FOR PROTECTING PUBLIC HEALTH AND AIDING INDUSTRY IN THE EVENT OF AN ACCIDENT. THE SIMPLE SQUARE ROOT OF THE RATIO OF A CHEMICAL'S VAPOR PRESSURE TO ITS TOXIC OR FLAMMABLE CONCENTRATION GIVES A MEASURE OF RISK. THE RATIO IS RELATED TO THE MINIMUM APPROACH DISTANCE AND CONSIDERS THE DISPERSION, VOLATILITY, AND TOXICITY OF A SPECIFIC CHEMICAL. (6 REFERENCES, 2 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *TRANSPORTATION ACCIDENTS ; *MATHEMATIC MODELS-CHEMICAL ; *ATMOSPHERIC DIFFUSION ; *VAPORIZATION ; *ATMOSPHERIC PRESSURE ; FLAMMABILITY ; MAXIMUM PERMISSIBLE EXPOSURE
REVIEW CLASSIFICATION: 02
(ENV)

0041255 EIM8209-032870
SPILLS: AN EVAPORATION/AIR DISPERSION MODEL FOR CHEMICAL SPILLS ON LAND.
Fleischer, Miguel T.
Shell Dev Co, Hoston, Tex, USA
Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA Conference Date: 1980 May 13-15
Sponsor: EPA, WAshington, DC, USA; US Coast Guard, Washington, DC, USA; Vanderbilt Univ, Nashville, Tenn, USA; Am Ind Hyg Assoc, Kansas City, Mo, USA; AIChE, New York, NY, USA; et al
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA p 375-380 1980
E.I. Conference No.: 00199
Language: English

Descriptors: *HAZARDOUS MATERIALS—*Spills
Identifiers: EVAPORATION RATE MODELS; AIR DISPERSION MODELS; MATHEMATICAL MODELS; CHEMICAL SPILLS; LIQUEFIED GASES; MASS TRANSFER; PROPANE; BUTANE
Classification Codes: 451 (Air Pollution); 452 (Sewage & Industrial Wastes Treatment); 901 (Engineering Profession); 804 (Chemical Products) 921 (Applied Mathematics); 723 (Computer Software) 45 (POLLUTION & SANITARY ENGINEERING); 90 (GENERAL ENGINEERING); 80 CHEMICAL ENGINEERING); 92 (ENGINEERING MATHEMATICS); 72 (COMPUTERS & DATA PROCESSING)
(EEM)

0232037 EIM8408-063867
SPREADING AND DISPERSION OF SOLUBLE CHEMICALS SPILLED IN NAVIGABLE RIVERS.
Morrow, T. B.; Buckingham, J. C.; Dodge, F. T.
Southwest Research Inst, Div of Engineering & Material Science, San Antonio, Tex, USA

Conference Title: Modeling of Environmental Flow Systems. (Presented at the Winter Annual Meeting of the American Society of Mechanical Engineers.)
Conference Location: Boston, Mass, USA Conference Date: 1983 Nov 13-18
Sponsor: ASME, Fluids Engineering Div, New York, NY, USA; ASCE, Engineering Mechanics Div, New York, NY, USA
Source: American Society of Mechanical Engineers, Fluids Engineering Division (Publication) FED v 8. Publ by ASME, New York, NY, USA p 77-78 1983
CODEN: FEDSDL
E.I. Conference No.: 03278
Language: English

Descriptors: *WATER POLLUTION—*Oil Spills
Identifiers: ABSTRACT ONLY; DENSE PLUME DISPERSION TESTS; LOW-SPEED TURBULENT WATER CHANNEL; NEAR FIELD MIXING/DILUTION; WATER SOLUBLE CHEMICALS; COMPUTER MODEL VALIDATION; DISCHARGE MOMENTUM; BUOYANCY CONDITIONS; INLET BAFFLES; VERTICAL VELOCITY PROFILES; HOT-FILM ANEMOMETER MEASUREMENTS
Classification Codes: 453 (Water Pollution) 45 (POLLUTION & SANITARY ENGINEERING)
(EEM)

AN CA101(14):115914x
TI **U.S. EPA, ERT's initial air monitoring guides for chemical spills**
AU Turpin, Rodney D.
CS Environ. Response Team, Environ. Prot. Agency
LO Edison, NJ, USA
SO Proc. Tech. Semin. Chem. Spills, 1st, 181-7. Environ. Prot. Serv. (Can.): Ottawa, ON.
SC 59-0 (Air Pollution and Industrial Hygiene)
DT C
CO 51ZGAB
PY 1983
LA Eng
AB A review with 1 ref. on the initial air monitoring program of US EPA for an accidental chem. release.
KW chem spill initial air monitoring; monitoring program chem release EPA

IT Air pollution
(monitoring program for, by accidental chem. release, of US EPA)
IT Standards, legal and permissive
(of air initial monitoring, for chem. spills, of US EPA)
IT Accidents
(of chem. spills, initial air monitoring program for, of US EPA)
IT Chemicals
(spills of, initial air monitoring program for, of US EPA)
(CAS)

0263496 EIM8412-095326
USE OF ACUTE TOXICITY DATA IN THE RISK ASSESSMENT OF THE EFFECTS OF ACCIDENTAL RELEASES OF TOXIC GASES.
Harris, N. C.; Moses, A. M.
Imperial Chemical Industries Ltd, Mond Div, Runcorn, Engl
Conference Title: 4th International Symposium on Loss Prevention and Safety Promotion in the Process Industries (EFCE Event n 290). (Volume 1: Safety in Operations and Processes.)
Conference Location: Harrogate, North Yorks, Engl Conference Date: 1983 Sep 12-16
Sponsor: Inst of Chemical Engineers, Rugby, Warwickshire, Engl; European Federation of Chemical Engineering
Source: Institution of Chemical Engineers Symposium Series n 80. Publ by Inst of Chemical Engineers (EFCE Publ Series n 33), Rugby, Warwickshire, Engl. Distributed by Pergamon Press, Oxford, Engl & New York, NY, USA p I36-I45 1983
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-08-030291-2
E.I. Conference No.: 05523
Language: English
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0296246 EIM8505-027926
USES AND MISUSES OF THE POPULATION VULNERABILITY MODEL.
Gardenier, John S.; Colonna, Guy R.
US Coast Guard Headquarters, Washington, DC, USA
Conference Title: Computer Simulation in Emergency Planning, Proceedings of the Conference.
Conference Location: San Diego, CA, USA Conference Date: 1983 Jan 27-29

Sponsor: Soc for Computer Simulation, La Jolla, CA, USA
Source: Simulation Series v 11 n 2 1983. Publ by Soc for Computer Simulation, La Jolla, CA, USA p 91-94 1983
CODEN: SISEDL
E.I. Conference No.: 05295
Language: English

The National Response Center for Water Pollution has a Hazard Assessment Computer System (HACS) to predict time-phased concentrations of spilled chemicals. Run in an emergency environment, this system is useful for supporting decisions on evacuation, deployment of response resources, and selection of response options. Other types of decisions must be made long before a community is faced with the emergency, before major facility sites are selected, before decisions are made about alternative vessels, chemicals or forms of chemicals to be shipped. The Population Vulnerability Model (PVM) adds a damage assessment capability to HACS for longer range planning. 8 refs.

Descriptors: *WATER POLLUTION--*Computer Simulation; CHEMICALS; HAZARDOUS MATERIALS
Identifiers: POPULATION VULNERABILITY MODEL; HAZARD ASSESSMENT COMPUTER SYSTEM; CHEMICAL SPILLS; EMERGENCY RESPONSE MEASURES
Classification Codes: 453 (Water Pollution); 723 (Computer Software); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 45 (POLLUTION & SANITARY ENGINEERING); 72 (COMPUTERS & DATA PROCESSING) ; 80 (CHEMICAL ENGINEERING)
(EEM)

133906 A
A wind tunnel model of the Porton dense gas spill field trials.
Hall, D.J.; Hollis, E.J. ; Ishaq, H.
Warren Spring Lab.
Stevenage, U.K., Warren Spring Lab., May 1982, 108p. (Report LR-394(AP))
(ISBN 0-85624-276-4) 0-85624-276-4
Languages: English

This report describes a study of wind tunnel model simulations of dense gas clouds released instantaneously in the atmosphere, undertaken to assess the validity of the wind tunnel modelling technique as a dispersion prediction method. The comparative data used was that obtained from the field trials carried out at the Chemical Defence Establishment, Porton Down, in 1976-7. The report also includes predictions relating to large-scale field trials being planned by the Health and Safety Executive for 1982. (A)

Descriptors: air pollution
Section Heading Codes: A15 ; A5
(FLU)

C. FIELD TESTS:

1144771 DE85012443/XAB
Dugway Test Grid Lidar Project
Johnson, D. W. ; Leonard, D. A.
Battelle Pacific Northwest Labs., Richland, WA.
Corp. Source Codes: 048335000; 9512268
Sponsor: GTE/Government Systems, Mountain View, CA.; Department of Energy, Washington, DC.
Report No.: PNL-SA-13143; CONF-8504142-1
May 85 4p
Workshop on remote sensing for chemical defense, Myrtle Beach, SC, USA, 16 Apr 1985.
Languages: English Document Type: Conference proceeding
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8522; NSA1000
Country of Publication: United States
Contract No.: AC06-76RL01830

The primary objective of this project is to design and build a differential absorption lidar (DIAL) system to support field tests involving chemical releases at Dugway Proving Grounds. The design goals are to create a system capable of +/-10% accuracy measurements of agent or simulant concentrations of 0.1 to 500 mg/m exp 3 . The desired spatial resolution is 2 m (radial, with respect to the chemical release point) and 20 m (azimuthal) with simultaneous temporal resolution of 10 sec or less over the entire plume. In addition, system performance should not be degraded significantly by the presence of dust, munitions by-products, obscurants, and other interferents. The current conceptual design calls for a pair of 100 pulse/sec, 100 mJ/pulse CO exp 2 lasers with computer-controlled frequency agility and scanning capability. The receiving optics have not been precisely specified, but will likely be 30 to 40 cm in diameter. Direct detection and digitization of the returned waveforms at 12-bit accuracy or better is also planned. ''Soft'' targets (wire screen in an open frame) are being considered for the test grid. 1 fig. (ERA citation 10:034717)

Descriptors: Carbon Dioxide Lasers; *Chemical Spills; Absorption Spectroscopy; Design; Detection; Equipment; Field Tests; Plumes; Pulses; Remote Sensing; Spatial Distribution; Spatial Resolution; Time Dependence
Identifiers: ERDA/500200; *Air pollution detection; NTISDE
Section Headings: 14B (Methods and Equipment—Laboratories, Test Facilities, and Test Equipment); 68A (Environmental Pollution and Control—Air Pollution and Control); 99A (Chemistry—Analytical Chemistry)
(NTIS)

1121415 AD-P004 486/7/XAB

Evaporation and Gaseous Dispersion of Large-Scale Releases of Nitrogen Textroxide

McRae, T. G. ; Goldwire, H. C. ; Koopman, R. P.
Lawrence Livermore National Lab., CA.

Corp. Source Codes: 068147000; 390999
Aug 84 10p
This article is from 'JANNAF (Joint Army-Navy-NASA-Air Force) Safety & Environmental Protection Subcommittee Meeting (1984) Held at Las Cruces, New Mexico on 7-11 May 1984,' AD-B086 924L, p249-258.
Chemical Propulsion Information Agency, Johns Hopkins Rd., Laurel, MD 20707 (No copies furnished by DTIC/NTIS).
Languages: English
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8513
Country of Publication: United States

A series of large-scale spills (3-5 cu m) of nitrogen tetroxide (N2O4) was performed at the Nevada Test Site (NTS) for the Air Force Engineering and Services Laboratory, Environics Division. The purpose of these experiments was to study the evaporation rates and heavy gas dispersion aspects of realistic size releases of N2O4, a rocket fuel oxidizer for the Titan II missile system. The Titan II complexes are currently being decommissioned, resulting in an increase in the overland transportation of this toxic material. The normal boiling point for the liquid N2O4 is 21 C, hence it evaporates rapidly when spilled onto warm soil and quickly dissociates into nitrogen dioxide (NO2) as it mixes with air. The NO2 is highly toxic with an ACGIH threshold limit value 3 parts per million (ppm). The design of the spill facility and the diagnostics are described. Some typical results for one of the spills are presented. The data included the atmospheric boundary layer conditions in effect during the spill, the spill area heat flux and vapor temperature, the vapor flux measured at 25 meters (m) downwind, and the NO2 gas concentration contours at 785 M.

Descriptors: *Liquid rocket oxidizers; *Nitrogen oxides; *Evaporation; *Dispersing; Spilling; Toxic agents; Soils; Dissociation; Laboratories; Test methods; Boundary layer; Heat flux; Vapors; Temperature; Concentration(Chemistry)
Identifiers: Nitrogen tetroxide; Component Reports; *Chemical spills; *Air pollution; NTISDODXA
Section Headings: 21I (Propulsion and Fuels—Rocket Propellants); 68C (Environmental Pollution and Control—Solid Wastes Pollution and Control); 68A (Environmental Pollution and Control—Air Pollution and Control); 81H (Combustion, Engines, and Propellants—Rocket Propellants)

(NTIS)

1172684 DE86001652/XAB

Facility for Large-Scale Hazardous Gas Testing Including Recent Test Results

Koopman, R. P.
Lawrence Livermore National Lab., CA.

Corp. Source Codes: 068147000; 9513035
Sponsor: Department of Energy, Washington, DC.
Report No.: UCRL-93424; CONF-851246-1
Sep 85 36p
Hazardous materials management conference and exhibition, Long Beach, CA, USA, 3 Dec 1985.
Languages: English Document Type: Conference proceeding
NTIS Prices: PC A03/MF A01 Journal Announcement: GRAI8607; NSA1100
Country of Publication: United States
Contract No.: W-7405-ENG-48

The US Department of Energy (DOE) is in the process of constructing a spill test facility for liquefied gaseous fuels and other hazardous materials in the Frenchman Flat basin on the Nevada Test Site (NTS) as shown in Fig. 1. The Lawrence Livermore National Laboratory (LLNL) is assisting DOE in construction of that facility and will be assisting with facility operation when construction is complete in January 1986. The facility is designed: (1) to discharge, at a controlled rate, a known amount of hazardous test fluid onto the surface of the dry lake bed; (2) to monitor and record process operating data, meteorological data, downwind gas concentration data, and other data as is required for the experiment; and (3) to provide a means to control and monitor these functions from a remote location. This design is described in detail by Johnson and Thompson, 1984. The spill facility consists of two generally separate process systems. The larger and more complex of the two is designed to handle cryogenic fluids such as LNG. The noncryogenic spill system is designed to handle fluids which are normally stored and shipped as pressurized liquids, such as ammonia. The NTS and the surrounding Nellis Air Force Range is remote and not open to public access. The area downwind of the spill facility is essentially unpopulated with access strictly controlled all the way to the Nellis boundary, 60 km (40 mi) away. This will allow testing with hazardous and toxic substances which could not be done anyplace else in the US. (ERA citation 11:006267)

Descriptors: *Ammonia; *Chemical Spills; *Hazardous Materials; *Nitrogen Oxides; Air Pollution Monitoring; Gaseous Wastes; Liquefied Gases; Management; Nevada Test Site; Portable Equipment; Risk Assessment; Test Facilities

Identifiers: ERDA/510500; ERDA/500200; NTISDE
Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 68A (Environmental Pollution and Control--Air Pollution and Control); 97R (Energy--Environmental Studies)
(NTIS)

0179288 *85-023494
MULTINATIONAL RESEARCH PROJECT ON DISPERSION OF HEAVY GAS CLOUDS,
JOHNSTON A. G.
UK HEALTH & SAFETY EXECUTIVE,
* CHEMICAL ENGINEERING PROGRESS, APR 85, V81, N4, P11(6)

JOURNAL ARTICLE THE RECENT SUCCESS OF THE MULTISPONSORED APPROACH TOWARDS ORGANIZING LARGE-SCALE SAFETY-ORIENTED RESEARCH IS LIKELY TO SET A TREND TO APPLY IT MORE WIDELY IN THE FUTURE. THE HEAVY GAS CLOUD DISPERSION TRIALS LAUNCHED BY 30 ORGANIZATIONS FROM MANY NATIONS TO COLLECT DATA ON THE BEHAVIOR OF MASSIVE RELEASES OF HEAVY FLAMMABLE OR TOXIC GASES TO THE ATMOSPHERE ILLUSTRATES THE EFFECTIVENESS OF MULTINATIONAL RESEARCH. BENEFITS OF MULTISPONSORSHIP INCLUDE REDUCED COSTS TO INDIVIDUAL ORGANIZATIONS AND GREATER LIKELIHOOD OF AGREEMENT ON THE ACCEPTABILITY OF PROJECT RESULTS. (3 GRAPHS, 10 REFERENCES, 1 TABLE,)

DESCRIPTORS: *CHEMICAL SPILLS ; *INTL ENV PROGRAMS ; *ATMOSPHERIC DIFFUSION ; *AIR POLLUTION RESEARCH ; AMMONIA
REVIEW CLASSIFICATION: 02
(ENV)

219239
Notice: DOE is preparing to construct a "unique" spill test facility for testing on hazardous chemicals and liquefied gaseous fuels at DOE's Nevada Test Site, to be made available on a user-fee basis. Design for this LGF Spill Test Facility is nearly complete; DOE seeks interested users. Forum to be held, Las Vegas NV, date and time t.b.a. CONTACT: J.E. Walsh, Deputy Asst Secy for Mgmt, Planning & Technical Coordination, Office of Fossil Energy, FE-10, U.S. Dept of Energy, Wash DC, 10545.
* Source: 49 FR 170 Page: 34395
AUGUST 30, 1984

Descriptors: ENGERY-GENERAL (5100); ENVIRONMENT-TOXIC MATERIALS (2620) TECHNOLOGY-ENVIRONMENTAL (4612)
(FR)

1163736 DE86000014/XAB

Status Report on the Frenchman Flat Ammonia Spill Study

Goldwire, H. C.
Lawrence Livermore National Lab., CA.
Corp. Source Codes: 068147000; 9513035
Sponsor: Department of Energy, Washington, DC.
Report No.: UCRL-93318; CONF-850836-8
Aug 85 22p
American Institute of Chemical Engineers national meeting, Seattle, WA, USA, 25 Aug 1985.
Languages: English Document Type: Conference proceeding
NTIS Prices: PC A02/MF A01 Journal Announcement: GRAI8603; NSA1000
Country of Publication: United States
Contract No.: W-7405-ENG-48

A series of four ammonia spills were made at Frenchman's Flat in Nevada as a part of a joint government-industry study. This paper outlines how the tests were conducted and the status of the data reduction. 6 refs., 6 figs. (ERA citation 10:052311)

Descriptors: *Ammonia; Diffusion; Experimental Data; Gas Spills
Identifiers: ERDA/500200; *Chemical spills; *Liquid wastes; NTISDE
Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 68A (Environmental Pollution and Control--Air Pollution and Control); 68C (Environmental Pollution and Control--Solid Wastes Pollution and Control)
(NTIS)

I. HAZARD IDENTIFICATION

D. RISK ASSESSMENT:

0312538 EIM8508-044218
ASSESSING THE RISKS OF MARITIME TRANSPORT OPERATIONS.
Atallah, S.; Athens, P.
Risk & Industrial Safety Consultants, Chicago, IL, USA
Conference Title: MariChem83, Conference on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Hamburg, West Ger Conference Date: 1983 Oct 18-20
Source: MariChem 83. Publ by Gastech Ltd, Rickmansworth, Engl p 111-120 1984
CODEN: MARID8 ISSN: 0264-2697 ISBN: 0-904-930-25-
E.I. Conference No.: 05667
Language: English

Risk assessment is a methodology which can be used by regulatory bodies, insurance companies and operators of facilities which handle hazardous materials to evaluate and, if necessary, reduce the risks that may be incurred as a result of accidents. This methodology generally entails four consecutive stages: Identification of potential hazards; Quantification of risks; Evaluation of risk acceptability; and Reduction of unacceptable risks. This paper provides general guidelines for the application of this methodology to existing or proposed marine terminal operations. Of specific interest are accidental releases of hazardous flammable and/or toxic cargoes in or near harbours and inland waterways. 42 refs.

Descriptors: *PORT TERMINALS—*Accidents; HAZARDOUS MATERIALS— Safe Handling
Identifiers: RISK ASSESSMENT; HAZARD IDENTIFICATION; MARINE CASUALTIES
Classification Codes: 407 (Maritime & Port Structures); 914 (Safety Engineering); 691 (Bulk Materials Handling) 40 (CIVIL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 69 (MATERIALS HANDLING)

(EEM)

0377227 EIM8604-023832
ASSESSMENT AND CONTROL OF MAJOR HAZARDS.
Anon
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl 454p 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

This conference proceedings contains 26 papers on industrial hazards grouped under following subtitles: Integrity and reliablity of plant (8); Consequence assessment (9); and Risk analysis and case studies (9).

Descriptors: *RISK STUDIES—*Assessment; CHEMICAL PLANTS—Accidents; CHEMICALS—Safe Handling; ACCIDENT PREVENTION—Legislation; PRESSURE VESSELS—Safety Valves
Identifiers: STORAGE VESSELS; TOXIC HAZARDS; EMERGENCY PROCEDURES; VAPOR CLOUD; EIREV
Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 619 (Pipes, Tanks & Accessories); 922 (Statistical Methods) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 61 (PLANT & POWER ENGINEERING); 92 (ENGINEERING MATHEMATICS)
(EEM)

0377253 EIM8604-023858
ASSESSMENT OF TOXIC HAZARDS.
Bridges, James W.
Univ of Surrey, Robens Inst of Industrial & Environmental Health & Safety, Guildford, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 413-428 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

Toxicity may be expressed in a variety of forms depending on the chemical which is involved, the nature of the population exposed, and the conditions of exposure. It is therefore more difficult to predict toxic hazard than fire or explosion hazard. The nature of the criteria is discussed and a scheme proposed for their application to the assessment of possible toxic hazard to man and to the environment from major incidents. (Edited author abstract) 8 refs.

Descriptors: *RISK STUDIES—*Assessment; CHEMICALS—Safe Handling; ACCIDENT PREVENTION—Legislation; CHEMICAL PLANTS—Safety Codes; HAZARDOUS MATERIALS

Identifiers: METHYLISOCYANATE; EXPOSURE TIME; DISPERSAL SYSTEMS; TOXIC EFFECTS
Classification Codes: 914 (Safety Engineering); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 802 (Chemical Apparatus & Plants) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)

(EEM)

0377250 EIM8604-023855

BASIC APPROACH FOR THE ANALYSIS OF RISKS FROM MAJOR TOXIC HAZARDS.

Pape, R. P.; Nussey, C.
Health & Safety Executive, Major Hazards Assessment Unit, Bootle, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 367-388 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

In this paper, the steps required for a basic quantitative top-down analysis of risks to the public from a bulk chlorine installation are described in outline. A computerised procedure developed within HSE is used to present the results in the form of contours of individual risk and graphs of societal risk. (Edited author abstract) 20 refs.

Descriptors: *RISK STUDIES—*Assessment; ACCIDENT PREVENTION—Legislation ; CHEMICAL PLANTS; CHEMICALS—Toxicity; INDUSTRIAL POISONS—Control
Identifiers: HAZARD CONTROL; LOSS-OF-CONTAINMENT; DISPERSION MODEL; MITIGATING FACTORS
Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)

(EEM)

0178626 *85-016411

CALCULATING THE CHEMICAL HAZARD OF RADIOACTIVE WASTE (WASTE POLICIES AND PROGRAMS, HIGH-LEVEL WASTE),

WICKHAM L. E.

EG&G IDAHO INC, ID,

ANS/ET AL WASTE MANAGEMENT 84 CONF, TUCSON, MAR 11-15, 84, V1, P655(5)

CONF PAPER LOW-LEVEL RADIOACTIVE WASTES CONTAIN A VARIETY OF SUBSTANCES THAT ARE BOTH RADIOACTIVE AND CHEMICALLY HAZARDOUS. A METHODOLOGY FOR COMPARING THE HAZARDS OF VARIOUS CHEMICALS QUANITTATIVELY WITH THOSE OF RADIOACTIVE MATERIALS IS PRESENTED IN THE FORM OF A WASTE CLASSIFICATION SYSTEM. THE SYSTEM ASSESSES THE HAZARDS OF MATERIALS BASED ON INTRINSIC TOXICITY, PERSISTENCE THROUGH TIME, AVAILABILITY TO A HUMAN RECEPTOR, AND BUILDUP OF DECAY OR DEGRADATION PRODUCTS. (12 REFERENCES, 3 TABLES,)

DESCRIPTORS: *RADIOACTIVE WASTE DISPOSAL ; *CHEMICAL WASTES ; *RADIATION, ATOMIC-DOSES ; *MATHEMATIC MODELS-CHEMICAL ; CHEMICAL RESIDUES ; LEACHING HEAVY METALS

REVIEW CLASSIFICATION: 14

(ENV)

0173049 *84-004958

CARCINOGENICITY, MUTAGENICITY AND TERATOGENICITY OF CARBAMATES, THIOCARBAMATES AND RELATED COMPOUNDS: AN OVERVIEW OF STRUCTURE-ACTIVITY RELATIONSHIPS AND ENVIRONMENTAL CONCERNS,

WOO YIN-TAK

JRB ASSOC, VA,

J ENV SCIENCE & HEALTH-ENV CARCINOGENESIS REVIEWS, 1983, V1, N1, P97 (37)

JOURNAL ARTICLE COMPARATIVE STUDIES OF THE TERATOGENICITY, MUTAGENICITY, AND CARCINOGENICITY OF CARBAMATE PESTICIDES TO HUMANS AND LABORATORY ANIMALS ARE REVIEWED. POSSIBLE INTERACTIONS WITH ENVIRONMENTAL FACTORS THAT MAY EXERT SIGNIFICANT EFFECTS ON THESE ACTIVITIES ARE ALSO DISCUSSED. A BETTER UNDERSTANDING OF THE STRUCTURAL REQUIREMENTS AND ENVIRONMENTAL INTERACTIONS OF THESE SUBSTANCES MAY PROVIDE A SOUND BASIS FOR HAZARD IDENTIFICATION AND ASSESSMENT. THE STRUCTURAL CHARACTERISTICS OF URETHAN, ACETYLENIC CARBAMATES, DITHIOCARBAMATE, THIURAM, AND RELATED COMPOUNDS ARE DETAILED. SYNERGISM AND POTENTIATION ARE ANALYZED. AMONG SIMPLE ALKYL CARBAMATES, URETHAN IS AN ESTABLISHED CARCINOGEN AND IS MUTAGENIC AND TERATOGENIC IN SOME TESTS. SMALL STRUCTURAL CHANGES MAY HAVE PROFOUND EFFECTS ON THESE DETRIMENTAL ACTIVITIES OF URETHAN. (2 DIAGRAMS, 178 REFERENCES, 5 TABLES)

DESCRIPTORS: *CARBAMATE PESTICIDES ; *CARCINOGENIC AGENTS ; *MUTAGENIC AGENTS ; *TERATOGENIC AGENTS ; *LITERATURE SURVEYS ; *PATHOLOGY, ANIMAL-LA *PESTICIDE RESIDUES ; SYNERGISTIC EFFECTS ; HEALTH SAFETY, OCCUPATIONAL
REVIEW CLASSIFICATION: 02
(ENV)

1598230 E.I. Monthly No: EI8603018765
CHEMICAL PLANT RISK ASSESSMENT: UNCERTAINTIES AND DEVELOPMENT NEEDS.
Griffiths, R. F.
Univ of Manchester Inst of Science & Technology, Pollution Research Unit, Manchester, Engl
* Environment International v 10 n 5-6 1984, Energy Risk, San Miniato, Italy, Jun 1983 p 523-530
CODEN: ENVIDV ISSN: 0160-4120 ISBN: 0-08-032812-1
Language: ENGLISH
Document Type: JA; (Journal Article) Treatment: A; (Applications)

A brief review is given covering the development of major hazards risk assessment since the Flixborough disaster of 1974, with special reference to the introduction of new regulations. The importance of risk assessment in the management of major hazards is discussed by reference to the Canvey Island studies, and it is suggested that the problem of uncertainties in the estimation of risks by analysis has not been adequately treated. Examples are given to illustrate the magnitude of such uncertainties in the consequence modelling of accidental releases from a chemical plant. In addition to suggested development needs in risk analysis techniques, topics are suggested which call for development in the evaluation and management of risks. (Author abstract) Refs.

Descriptors: *CHEMICAL PLANTS—*Environmental Impact; RISK STUDIES—Assessment; ENVIRONMENTAL PROTECTION—Legislation
Identifiers: RISK MANAGEMENT; UNCERTAINTY ANALYSIS; FLIXBOROUGH DISASTER, 1974
Classification Codes: 802 (Chemical Apparatus & Plants); 454 (Environmental Engineering); 914 (Safety Engineering); 902 (Engineering Graphics & Standards) 80 (CHEMICAL ENGINEERING); 45 (POLLUTION & SANITARY ENGINEERING); 91 (ENGINEERING MANAGEMENT); 90 (GENERAL ENGINEERING)
(COM)

0260157 EIM8412-091987

CHEMICAL PLANT RISK ASSESSMENT USING HAZOP AND FAULT TREE METHODS: MANAGING THE PROBLEMS OF UNCERTAINTY.

Bendixen, Lisa M.; O'Neill, J. Kevin

Arthur D. Little Inc, Cambridge, Mass, USA

Conference Title: American Institute of Chemical Engineers, 1984 Winter National Meeting (Preprints).

Conference Location: Atlanta, Ga, USA Conference Date: 1984 Mar 11-14

Sponsor: AIChE, New York, NY, USA

Source: American Institute of Chemical Engineers, National Meeting 1984 Winter. Publ by AIChE, New York, NY, USA Pap 43b, 15p 1984

CODEN: ACENC9

E.I. Conference No.: 05076

Language: English

Descriptors: *CHEMICAL PLANTS—*Safety Devices

Identifiers: CHEMICAL ENGINEERING; RISK LEVELS; PROBABILISTIC RISK ASSESSMENT; PRA; HAZARD IDENTIFICATION; HAZARD PROBABILITIES; EVALUATION OF RISKS; PUBLIC SAFETY

Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 922 (Statistical Methods) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 92 (ENGINEERING MATHEMATICS)

(EEM)

0326580 EIM8510-058260

CHEMICALS IN THE ENVIRONMENT: AN APPROACH TO ESTIMATE MAGNITUDE OF RISK.

Nees, Paul O.

Occidental Chemical Corp, Niagara Falls, NY, USA

Conference Title: Environmental Engineering, Proceedings of the 1985 Specialty Conference.

Conference Location: Boston, MA, USA Conference Date: 1985 Jul 1-5

Sponsor: ASCE, Environmental Engineering Div, New York, NY, USA; Northeastern Univ, Boston, MA, USA; ASCE, Boston Soc of Civil Engineers Section, Boston, MA, USA; New England Water Pollution Assoc, USA

Source: Publ by ASCE, New York, NY, USA p 1088-1096 1985

ISBN: 0-87262-468-4

E.I. Conference No.: 06686

Language: English

This paper provides an overview of application of toxicological procedures to estimate health risks posed by hazardous materials in the environment. Emphasis will be placed on information sources and shortcut formulas which the non-toxicologist can utilize to put hazards into perspective and estimate the magnitude of potential risks. (Author abstract.) 7 refs.

Descriptors: *CHEMICALS--*Environmental Impact; ORGANIC COMPOUNDS--Environmental Impact
Identifiers: HAZARDOUS CHEMICALS; TOXICOLOGICAL PROCEDURES; HAZARD IDENTIFICATION; DOSE-RESPONSE ASSESSMENT; EXPOSURE ASSESSMENT; RISK CHARACTERIZATION
Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals) ; 804 (Chemical Products); 901 (Engineering Profession) 80 (CHEMICAL ENGINEERING); 90 (GENERAL ENGINEERING)

(EEM)

0023956 EIM8207-005185
COLLECTION OF DATA FROM CHEMICAL PLANT INCIDENTS AS AN AID TO THE IMPROVEMENT OF HAZARD ANALYSIS TECHNIQUES.
Roberts, A. F.
Explos & Saf Lab, Buxton, Derbyshire, Engl
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 3. Publ by Swiss Soc of Chem Ind, Basle, Switz p 1443-1450 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: CHEMICAL PLANT INCIDENTS; HAZARD ANALYSIS TECHNIQUES; TOXIC SUBSTANCE; FLAMMABLE SUBSTANCE; PLANT LOCATION; PLANT DESIGN; EXPLOSION DAMAGE; FIRES; EXPLOSION; RELEASE CONDITIONS; FIRE AND EXPLOSION EFFECTS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0023884 EIM8207-005113

COMPARATIVE RISK ANALYSIS OF PROCESSING PLANT.

Hansen, J.; de Heer, H. J.; Kortlandt, D.
DSM, Neth
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/455-6/46 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS—*Accident Prevention
Identifiers: RISK ANALYSIS; PROCESSING OPERATIONS; FLAMMABLE FLUIDS; FAILURE PRONE COMPONENTS; FLANGE EQUIVALENTS; DESIGN CHARACTERISTICS; PRIORITIES IN COMBATING RISK; PROBABILITY; COMPARATIVE RISK ANALYSIS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0377245 EIM8604-023850

CRITERIA FOR USE IN THE ASSESSMENT AND CONTROL OF MAJOR HAZARDS.

Helsby, G. H.; White, R. F.
Hazards Evaluation & Loss Prevention Ltd, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 273-287 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

The paper derives criteria which can be applied to risk assessment for those major consequences which could result in hurt to on-site personnel and members of the public. These criteria are justified in the light of other societal risks (both imposed and voluntary) and are integrated into the cumulative risk to any individual. The methodology described is applicable to releases of toxic gases. (Edited author abstract) 11 refs.

Descriptors: *RISK STUDIES—*Assessment; HAZARDOUS MATERIALS—Control; CHEMICAL PLANTS—Accident Prevention; INDUSTRIAL POISONS—Legislation

Identifiers: ACCIDENT HAZARDS; HAZARD CONSEQUENCES; TOXIC GASES; LOSS PREVENTION; ENVIRONMENTAL POLLUTION

Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 902 (Engineering Graphics & Standards) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 90 (GENERAL ENGINEERING)

(EEM)

1605422 DATABASE: MI File 47 *Use Format 9 for FULL TEXT*

Deadly threat of hazardous chemical spills.

Huntley, Steve

* US News and World Report v94 p34(1) June 20 1983

CODEN: XNWRA

illustration; photograph

AVAILABILITY: FULL TEXT Online

LINE COUNT: 00074

SIC CODE: 4700; 4011

DESCRIPTORS: hazardous wastes—transportation; trucks—accidents, etc.; transportation—rules and regulations; motor fuels—transportation; railroads—accidents

(MAG)

0377229 EIM8604-023834

DEVELOPMENTS IN THE CONTROL OF MAJOR HAZARDS

Barrell, A. C.

Health & Safety Executive, Major Hazards Assessment Unit, Bootle, Engl

Conference Title: Assessment and Control of Major Hazards.

Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24

Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc

Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 1-12 1985

CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2

E.I. Conference No.: 07832

Language: English

Greater media attention and increasing public awareness of major accident hazards in Britain and elsewhere has produced demands for tighter safety controls and more public information. There are now both voluntary and statutory controls on town and country planning in and around major hazard sites in Britain. This paper describes the controls and main areas of research and suggests the directions in which future work might most profitably proceed. (Edited author abstract) 24 refs.

Descriptors: *RISK STUDIES—*Assessment; CHEMICALS—Safe Handling; HAZARDOUS MATERIALS—Spills; ACCIDENT PREVENTION—Legislation
Identifiers: GAS CLOUD DISPERSION; NON-SPHERICAL EXPLOSIONS; FRICTIONAL LOSSES
Classification Codes: 914 (Safety Engineering); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 421 (Materials Properties) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 42 (MATERIALS PROPERTIES & TESTING)
(EEM)

0284532 EIM8503-016212
EVALUATING TECHNOLOGICAL RISK: PRESCRIPTIVE AND DESCRIPTIVE PERSPECTIVES.
Lathrop, John W.
Int Inst for Applied Systems Analysis, Laxenburg, Austria
Conference Title: Risk Analysis Controversy: An Institutional Perspective, Proceedings of a Summer Study on Decision Processes and Institutional Aspects of Risk.
Conference Location: Laxenburg, Austria Conference Date: 1981 Jun 22-26
Sponsor: Int Inst for Applied Systems Analysis, Laxenburg, Austria
Source: Publ by Springer-Verlag, Berlin, West Ger and New York, NY, USA p 165-180 1982
ISBN: 3-540-12012-2
E.I. Conference No.: 04606
Language: English

Decisions concerning the deployment and management of novel or hazardous technologies raise several issues involving the evaluation of their impacts on society. Examples of such decisions include the siting of a liquefied natural gas facility, the regulation of nuclear energy production, and the screening and regulation of toxic chemicals. Each of these kinds of decisions results in uncertain benefits and costs to society. The need to

appraise the risks presented by a new or hazardous technology has led to the development of several analytic techniques often referred to collectively as risk assessment. 23 refs.

Descriptors: *PROBABILITY—*Accident Prevention; ENVIRONMENTAL PROTECTION —Standards; SYSTEMS ANALYSIS—Applications
Identifiers: COST-BENEFIT ANALYSIS; ATTITUDE EVALUATION; ECONOMIC ANALYSES; SOCIAL RISK MANAGEMENT; RISK APPRAISAL; TOXIC MATERIALS
Classification Codes: 922 (Statistical Methods); 914 (Safety Engineering); 901 (Engineering Profession); 902 (Engineering Graphics & Standards); 912 (Industrial Engineering & Management) 92 (ENGINEERING MATHEMATICS); 91 (ENGINEERING MANAGEMENT); 90 (GENERAL ENGINEERING)

(EEM)

0180869 EIM8402-012699
FUZZY FAULT TREE ANALYSIS AND ITS APPLICATION TO THE PREVENTION OF DUST EXPLOSION.
Tanaka, H.; Lai, F. S.; Fan, L. T.
Kansas State Univ, Dep of Chemical Engineering, Manhattan, Kans, USA
Conference Title: American Institute of Chemical Engineers, 1983 Spring National Meeting and Petro Expo '83 (Preprints).
Conference Location: Houston, Tex, USA Conference Date: 1983 Mar 27-31
Sponsor: AIChE, New York, NY, USA
Source: American Institute of chemical Engineers, National Meeting 1983 Spring. Publ by AIChE, New York, NY, USA Pap 75d, 31p 1983
CODEN: ACENC9
E.I. Conference No.: 03056
Language: English
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0335053 EIM8511-066733
HAZARD AND OPERABILITY STUDY: A FLEXIBLE TECHNIQUE FOR PROCESS SYSTEM SAFETY AND RELIABILITY ANALYSIS.
Shafaghi, A.; Gibson, S. B.
Battelle Columbus Lab, Columbus, OH, USA
Conference Title: Chemical Process Hazard Review. (Based on a symposium held at the 187th Meeting of the American Chemical Society.)
Conference Location: St. Louis, MO, USA Conference Date: 1984 Apr 8-13

Source: ACS Symposium Series 274. Publ by ACS, Washington, DC, USA p 33-39 1985
E.I. Conference No.: 06576
(EEM)

0180867 EIM8402-012697
HAZARD IDENTIFICATION DURING PROCESS DESIGN.
Huetinck, Henk
Fluor Engineers Inc, Advanced Technology Div, Irvine, Calif, USA
Conference Title: American Institute of Chemical Engineers, 1983 Spring National Meeting and Petro Expo '83 (Preprints).
Conference Location: Houston, Tex, USA Conference Date: 1983 Mar 27-31
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1983 Spring. Publ by AIChE, New York, NY, USA Pap 75b, 19p 1983
CODEN: ACENC9
E.I. Conference No.: 03056
Language: English

Descriptors: *CHEMICAL OPERATIONS—*Accident Prevention
Identifiers: WORKER PROTECTION; CHEMICAL ENGINEER'S ROLE; FORESEEING LOSS ; HAZARD IDENTIFICATION REQUIREMENTS; SUGGESTED FORMAT; BENEFITS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 912 (Industrial Engineering & Management) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0263485 EIM8412-095315
HAZARD IDENTIFICATION PROCEDURES.
Lowe, D. R. T.; Solomon, C. H.
Imperial Chemical Industries Ltd, UK
Conference Title: 4th International Symposium on Loss Prevention and Safety Promotion in the Process Industries (EFCE Event n 290). (Volume 1: Safety in Operations and Processes.)
Conference Location: Harrogate, North Yorks, Engl Conference Date: 1983 Sep 12-16
Sponsor: Inst of Chemical Engineers, Rugby, Warwickshire, Engl; European Federation of Chemical Engineering

Source: Institution of Chemical Engineers Symposium Series n 80. Publ by Inst of Chemical Engineers (EFCE Publ Series n 33), Rugby, Warwickshire, Engl. Distributed by Pergamon Press, Oxford, Engl & New York, NY, USA p G8-G24 1983
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-08-030291-2
E.I. Conference No.: 05523
Language: English

Descriptors: *CHEMICAL PLANTS—*Accidents
Identifiers: ISGRA; INTERNATIONAL STUDY GROUP ON RISK ANALYSIS; HAZARD IDENTIFICATION; PROCESS INDUSTRY SAFETY; OPERABILITY STUDIES; FAILURE MODES ; EFFECT ANALYSIS; FAULT TREE ANALYSIS; HAZARD INDICES; EVENT TREE ANALYSIS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 804 (Chemical Products); 522 (Gas Fuels); 523 (Liquid Fuels) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 52 (FUEL TECHNOLOGY)

(EEM)

0292601 EIM8505-024281
HEALTH IMPACT OF TOXIC WASTES: ESTIMATION OF RISK.
Kimbrough, Renate D.
US Dep of Health & Human Services, Cent for Disease Control, Atlanta, GA, USA
Conference Title: Analysis of Actual Versus Perceived Risks (Proceedings of the Society for Risk Analysis International Workshop).
Conference Location: Washington, DC, USA Conference Date: 1981 Jun 1-3
Sponsor: Soc for Risk Analysis; WHO, Geneva, Switz; NAS, Board on Toxicology & Environmental Health Hazards, Washington, DC, USA; NAS, Assembly of Behavioral & Social Sciences, Washington DC, USA
Source: Advances in Risk Analysis v 1. Publ by Plenum Press, New York, NY, USA and London, Engl p 259-265 1983
CODEN: ARANES ISBN: 0-306-41397-3
E.I. Conference No.: 04170
Language: English

Toxic waste disposal has been very haphazard in the past. Only recently has it been recognized that certain chemicals may persist for many years, that they may migrate, and that drums containing them eventually corrode. Toxic wastes have been and are still being handled in a number of ways. They may be temporarily or permanently stored in controlled and uncontrolled landfills. Occupational exposure may occur when such wastes are handled, remedial actions are taken or warehouses containing chemical wastes catch on fire. The general public may be exposed directly or indirectly. 18 refs.

Descriptors: *WASTE DISPOSAL—*Accident Prevention; ENVIRONMENTAL PROTECTION—Legislation
Identifiers: HEALTH HAZARDS; WASTE TOXICITY; CHEMICAL WASTES; CANCER RISKS; SEWAGE TREATMENT; WASTE HANDLING
Classification Codes: 452 (Sewage & Industrial Wastes Treatment); 914 (Safety Engineering); 461 (Biotechnology); 901 (Engineering Profession) 45 (POLLUTION & SANITARY ENGINEERING); 91 (ENGINEERING MANAGEMENT); 46 (BIOENGINEERING); 90 (GENERAL ENGINEERING)
(EEM)

0023879 EIM8207-005108
HISTORICAL AND THEORETICAL APPROACHES TO THE PREDICTION OF HAZARD AND RISK.
Marshall, V. C.
Univ of Bradford, Engl
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/395-6/40 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL INDUSTRY—*Accident Prevention
Identifiers: LOSS PREVENTION; RISK ANALYSIS; ALGORITHM; HAZARD ANALYSIS; TOXIC HAZARDS; HISTORICAL APPROACH; FAULT TREE METHODS; EXPLOSIONS; FIRES; TOXIC RELEASES
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0264819 EIM8412-096649
IDENTIFYING MAJOR PROCESS HAZARDS AT THE CONCEPT DESIGN STAGE.
Pyman, M. A. F.; Mitchell, F. R.
Technica Ltd, London, Engl
Conference Title: Design '82. (EFCE Event no 265.)
Conference Location: Birmingham, West Midl, Engl Conference Date: 1982 Sep 22-23

Sponsor: Inst of Chemical Engineers, Rugby, Warwickshire, Engl
Source: Institution of Chemical Engineers Symposium Series n 76. Publ by Inst of Chemical Engineers (EFCE Publ Series n 22), Rugby, Warwickshire, Engl p 96-106 1982
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-150-7
E.I. Conference No.: 05512
Language: English

Descriptors: *CHEMICAL PLANTS—*Accident Prevention
Identifiers: CHEMICAL PLANT SAFETY; HAZARD IDENTIFICATION; OFFSHORE PLATFORMS; SAFETY DESIGN CRITERIA; HAZOP TECHNIQUE; HAZARD AND OPERABILITY COURSE SCALE STUDY
Classification Codes: 802 (Chemical Apparatus & Plants); 402 (Buildings & Towers); 914 (Safety Engineering); 674 (Other Marine Craft) 80 (CHEMICAL ENGINEERING); 40 (CIVIL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 67 (MARINE ENGINEERING)
(EEM)

0377247 EIM8604-023852
IFAL - A NEW RISK ANALYSIS TOOL.
Whitehouse, H. B.
Insurance Technical Bur, London, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 309-322 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

The Insurance Technical Bureau has developed a method of calculating the expected average loss from fire and explosion for plants handling flammable materials. The method is outlined and the sort of results which come from it are discussed. (Edited author abstract)

Descriptors: *RISK STUDIES—*Assessment; FLAMMABLE MATERIALS—Accident Prevention; CHEMICAL PLANTS—Explosions; CHEMICALS—Safe Handling

Identifiers: LOSS FROM FIRE; FIRE HAZARDS; EXPLOSION HAZARDS; SAFETY PRECAUTIONS
Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)
(EEM)

0095332 EIM8304-022543
INDUSTRY'S GUIDELINES FOR RISK ASSESSMENT.
Dreith, Richard H.
Shell Oil Co, Houston, Tex, USA
Conference Title: Risk Assessment at Hazardous Waste Sites. (Based on a Symposium at the 183rd Meeting of the American Chemical Society.)
Conference Location: Las Vegas, Nev, USA Conference Date: 1982 Mar-Apr
Sponsor: ACS Comm on Environ Improv, Washington, DC, USA
Source: ACS Symposium Series (American Chemical Society) 204. Publ by ACS, Washington, DC, USA p 45-53 1982
CODEN: ACSMC8 ISSN: 0097-6156 ISBN: 0-8412-0747-X
E.I. Conference No.: 01785
Language: English

Descriptors: *INDUSTRIAL WASTES—*Environmental Impact
Identifiers: HAZARD EVALUATION; RISK RESPONSE; RESPONSE RESOURCE ALLOCATION; HAZARD IDENTIFICATION; RISK EVALUATION; RISK CLASSIFICATION SYSTEM; EVALUATION OF WASTE DISPOSAL SITES IN CALIFORNIA
Classification Codes: 451 (Air Pollution); 452 (Sewage & Industrial Wastes Treatment); 453 (Water Pollution); 901 (Engineering Profession); 914 (Safety Engineering) 45 (POLLUTION & SANITARY ENGINEERING); 90 (GENERAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0379668 EIM8604-026273
INTEGRATED TESTING FOR THE EVALUATION OF THERMAL HAZARDS.
Hoppe, T. F.; Weir, E. D.
Ciba-Geigy Corp, Toms River, NJ, USA
Conference Title: Thermal Analysis, Proceedings of the Seventh International Conference.
Conference Location: Kingston, Ont, Can
Conference Date: 1982 Aug 22-28

Source: v 2. Publ by John Wiley & Sons, Chichester, Engl and New York, NY, USA p 1447-1455 1982
ISBN: 0-471-26245-5
E.I. Conference No.: 05650
Language: English

Recently within the United States Chemical Processing Industry (CPI) there has been a trend to assess certain aspects of processing risks through the use of thermal analytical methods. The initial result of this trend has been the development of methods for the determination of thermal hazards through the use of global-kinetics. These methods are both rapid and easy to use but normally can only be applied to simple chemical systems. Initially, an outline of the methods and the pitfalls involved in doing such a complex investigation will be discussed. Finally, in support of the theoretical section of the paper, two short examples will be presented where this type of integrated analysis has been used. 6 refs.

Descriptors: *THERMAL EFFECTS—*Accident Prevention; CHEMICAL REACTIONS—Reaction Kinetics; COMPUTER SIMULATION
Identifiers: THERMAL HAZARD ASSESSMENT; ISOTHERMAL TECHNIQUE; THERMAL ANALYTICAL DATA; POTENTIAL ENERGY RELEASE ANALYSIS; TEMPERATURE PROGRAMMED METHOD; ADIABATIC MEASUREMENT TECHNIQUE
Classification Codes: 421 (Materials Properties); 914 (Safety Engineering); 801 (Chemical Analysis & Physical Chemistry); 802 (Chemical Apparatus & Plants); 723 (Computer Software) 42 (MATERIALS PROPERTIES & TESTING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 72 (COMPUTERS & DATA PROCESSING)

(EEM)

0228414 EIM8408-060244

INTRODUCTION TO GUIDE WORK HAZARD & OPERABILITY STUDIES.

Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can

Conference Title: Proceedings - 32nd Canadian Chemical Engineering Conference.
Conference Location: Vancouver, BC, Can Conference Date: 1982 Oct 3-6
Sponsor: Canadian Soc for Chemical Engineering, Ottawa, Ont, Can
Source: Proceedings - Canadian Chemical Engineering Conference 32nd v 3. Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 1200-1205 1982
CODEN: PCECE7
E.I. Conference No.: 03982
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: HAZARD IDENTIFICATION; HAZARD/OPERABILITY STUDIES; TEAM COMPOSITION; STUDY PROCEDURE; TIMING; COST-BENEFIT ANALYSIS
Classification Codes: 402 (Buildings & Towers); 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 40 (CIVIL ENGINEERING); 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0372185 EIM8603-018790
INVESTIGATION OF THE SAFETY ASPECTS IN THE USE OF HYDROGEN AS A GROUND TRANSPORTATION FUEL.
Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Hydrogen Energy Progress V, Proceedings of the 5th World Hydrogen Energy Conference.
Conference Location: Toronto, Ont, Can Conference Date: 1984 Jul 15-20
Sponsor: Int Assoc for Hydrogen Energy; Government of Ontario, Ont, Can; Government of Quebec, Que, Can; Hydrogen Industry Council; Natl Research Council of Canada, Can; et al
Source: Advances in Hydrogen Energy 4 v 4. Publ by Pergamon Press, New York, NY, USA and Oxford, Engl on behalf of Int Assoc for Hydrogen Energy p 1881-1892 1984
CODEN: AHENDB ISSN: 0276-2412 ISBN: 0-08-030953-4
E.I. Conference No.: 07500
Language: English
(EEM)

******** SEE SECTION I-A FOR MORE DETAIL ********

0335058 EIM8511-066738
KINETIC AND REACTOR MODELING: HAZARD EVALUATION AND SCALE-UP OF A COMPLEX REACTION.
Chakrabarti, Ashok; Steiner, Edwin C.; Werling, Craig L.; Yoshimine, Mas
Dow Chemical Co, Midland, MI, USA
Conference Title: Chemical Process Hazard Review. (Based on a symposium held at the 187th Meeting of the American Chemical Society.)
Conference Location: St. Louis, MO, USA Conference Date: 1984 Apr 8-13
Sponsor: ACS, Div of Chemical Health & Safety, Washington, DC, USA; Natl Safety Council, Industrial Div, Chicago, IL, USA
Source: ACS Symposium Series 274. Publ by ACS, Washington, DC, USA p 91-105 1985

CODEN: ACSMC8 ISSN: 0097-6156 ISBN: 0-8412-0902-2
E.I. Conference No.: 06576
Language: English

Two separate models based on Dow Advanced Continuous Simulation Language (DACSL) were used in these studies. The first model used laboratory data and parameter estimation to determine the Arrhenius constants for two desired and eight undesired reactions in a process. The second model used the Arrhenius constants, heats of reaction, different physical properties, and reactor parameters to simulate the effect of reaction conditions on the temperature of the reaction mixture, pressure and gas flow rates in the reactor, yield, and assay of the product. The program has been successfully used in two scale-ups where the optimum safe operating conditions, effect of various possible failures, and control of possible abnormal conditions were evaluated. 3 refs.

Descriptors: *CHEMICAL REACTIONS--*Computer Simulation; CHEMICAL OPERATIONS--Accident Prevention; CHEMICAL EQUIPMENT--Reactors; COMPUTER PROGRAMS
Identifiers: DOW ADVANCED CONTINUOUS SIMULATION LANGUAGE; DACSL; ARRHENIUS CONSTANTS; SCALE-UPS
Classification Codes: 802 (Chemical Apparatus & Plants); 723 (Computer Software); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0168939 *84-000872

LIMITATIONS AND USEFULNESS OF METHODS FOR PREDICTING RISK OF RARE OR UNPRECEDENTED EVENTS ,

FARMER F. R.
UNIV OF BRADFORD, UK,

ROYAL SOCIETY OF CANADA/ET AL RISK ASSESSMENT & PERCEPTION SYM, TORONTO, OCT 18-19, 82, P109 (9)

CONF PAPER THE NEED TO ANTICIPATE THE RISKS OF RARE OR UNPRECEDENTED EVENTS IS EXAMINED. THESE INCLUDE CHEMICAL SPILLS, TRANSPORTATION ACCIDENTS, FIRES AND EXPLOSIONS, AND NUCLEAR ACCIDENTS. METHODS EMPLOYED TO PREDICT AND ANALYZE SUCH EVENTS ARE IDENTIFIED: FAULT TREES, EVENT TREES, AND FREQUENCY ANALYSES. LIMITATIONS INHERENT IN THESE TECHNIQUES INCLUDE LACK OF PERCEPTION, LACK OF DATA, IMPERFECTION IN KNOWLEDGE OF COMPLEX PHEMOENA, AND INABILITY TO ACCEPT QUANTIFIED RISK ANALYSES. USEFULNESS CENTERS AROUND IMPROVED APPRECIATION OF THE PROBLEM, REDUCTION OF RISK THROUGH ENHANCED DESIGN OR OPERATION, AND IDENTIFICATION OF UNCERTAINTIES NEEDING CLARIFICATION. (1 DIAGRAM, 3 GRAPHS, 15 REFERENCES)

DESCRIPTORS: *DEATH RATES ; *CHEMICAL SPILLS ; *NUCLEAR ACCIDENTS ; *TRANSPORTATION ACCIDENTS ; MATHEMATIC MODELS ; HEALTH SAFETY, OCCUPATIONA EXPLOSIONS
REVIEW CLASSIFICATION: 02
(ENV)

0339017 EIM8511-070697
MACRO FAULT TREE AND ITS APPLICATION TO PETRO-CHEMICAL PLANT-ACCIDENTS.
Terano, T.; Masui, S.; Murayama, Y.; Aida, S.; Akiyama, N.
Hosei Univ, Sch of Engineering, Koganei, Jpn
Conference Title: Bridge Between Control Science and Technology, Proceedings of the Ninth Triennial World Congress of IFAC. (Volume 4: Process Industries, Power Systems.)
Conference Location: Budapest, Hung Conference Date: 1984 Jul 2-6
Sponsor: Int Assoc for Mathematics & Computer Simulation, Brussels, Belg IFAC, Laxenburg, Austria; IFIP, Geneva, Switz; Int Federation of Operational Research Soc, Lyngby, Den; Int Measurement Confederation, Budapest, Hung; et al
Source: IFAC Proceedings Series 1985 n 4. Publ for IFAC by Pergamon Press, Oxford, Engl, and New York, NY, USA p 1759-1763 1985
CODEN: IPSEET ISSN: 0741-1146 ISBN: 0-08-031670-0
E.I. Conference No.: 06970
Language: English

In this paper, authors introduce a new method which is effective for the analysis. They combine Fault Tree Analysis with Multi-variable Analysis by considering sets of events. The grade of occurrence and the transition of macro-events are fuzzified in the calculation of MFT. They can obtain common characteristics of accidents through this analysis and the general counterplans are easily deduced. They apply this method to the analysis on real data of the plant-accidents happened in Kawasaki industrial area in 12 years and confirm its effectiveness. (Edited author abstract) 7 refs.

Descriptors: *PETROCHEMICAL PLANTS—*Accident Prevention; MATHEMATICAL TECHNIQUES—Fuzzy Sets; PROCESS CONTROL
Identifiers: EVENT TREE ANALYSIS; SAFETY ANALYSIS; FAULT TREE ANALYSIS
Classification Codes: 513 (Petroleum Refining); 914 (Safety Engineering); 731 (Automatic Control Principles); 921 (Applied Mathematics) 51 (PETROLEUM ENGINEERING); 91 (ENGINEERING MANAGEMENT); 73 (CONTROL ENGINEERING); 92 (ENGINEERING MATHEMATICS)
(EEM)

0008769 EIM8207-015019
MAJOR INCIDENT CRITERIA.
Lowe, David
Imp Chem Ind Ltd, Engl
Conference Title: Opportunities and Constraints: Proceedings of the 1980 Eurochem Conference. (EFCE Event no 239 (European Federation of Chemical Engineering)
Conference Location: Birmingham, Engl Conference Date: 1980 Jun 24-26
Sponsor: Inst of Chem Eng, Rugby, Warwickshire, Engl
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 14, Publ by Inst of Chem Eng, Rugby, Warwickshire, Engl p 5:1. 1-5:1. 28 1980
CODEN: EPSEDI ISBN: 0-85295-123X
E.I. Conference No.: 00214
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: MAJOR INCIDENT CRITERIA; HAZARD ANALYSIS; BOUNDARY CRITERIA MAJOR HAZARDS; RESOURCES FOR SAFETY; SAFETY PERFORMANCE
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0312529 EIM8508-044209
MARPOL ANNEX II IMPLEMENTATION - COMPETING CONSIDERATIONS.
Ingram, D. W.
UK Chemical Industries Assoc, Bulk Shipping Committee, London, Engl
Conference Title: MariChem83, Conference on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Hamburg, West Ger Conference Date: 1983 Oct 18-20
Source: MariChem 83. Publ by Gastech Ltd, Rickmansworth, Engl p 35-39 1984
CODEN: MARID8 ISSN: 0264-2697 ISBN: 0-904-930-25-
E.I. Conference No.: 05667
Language: English

Consideration of world trade and shipping patterns shows that the chance of a major incident occurring with release of chemicals such as to cause a pollution problem is only about 1-2% of the corresponding likelihood of an oil incident. If an incident with chemicals does occur, it will probably be on only 10% of the physical scale of an oil incident. Furthermore, there is only about a 10% chance of the released material being more harmful to the environment than motor gasoline. Thus, the lack of incidents involving chemicals over the years since MARPOL is shown to be due to the

satisfactory nature of current trade practice rather than to persistent good fortune. Even though an occasional 'chemical' incident in the future may be expected, no case exists for a sudden significant change of current practices. 8 refs.

Descriptors: *WATER POLLUTION--*Control; WATERWAY TRANSPORTATION--Accidents
Identifiers: CHEMICAL SPILLS; POLLUTION POTENTIAL; CHEMICAL TANKER INDUSTRY
Classification Codes: 453 (Water Pollution); 434 (Waterway Transportation); 914 (Safety Engineering) 45 (POLLUTION & SANITARY ENGINEERING); 43 (TRANSPORTATION); 91 (ENGINEERING MANAGEMENT)

(EEM)

0023880 EIM8207-005109

METHODOLOGY PROBLEMS IN REPREDICTING ACCIDENTS WHICH HAVE ACTUALLY OCCURRED.

Jacobsen, Oliver Finn
Riso Natl Lab, Den
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/409-6/42 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL INDUSTRY--*Accident Prevention
Identifiers: RISK ANALYSIS; GUNPOWDER DRYING EXPLOSION; HAZARD TREE; REACTOR RUPTURE; CAUSE-CONSEQUENCE ANALYSIS; STANDARDIZED FAULT TREES; FAULT MODELS; CHEMICAL PROCESS EQUIPMENT; CHEMICAL REACTIONS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0023931 EIM8207-005160

METHODS FOR THE ESTIMATION OF THE EFFECTS OF ACCIDENTAL RELEASE OF LIQUEFIED GASES.

Rosak, J.; Skarka, J.

Chemoprojekt, Prague, Czech

Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.

Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19

Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz

Source: Prepr v 3. Publ by Swiss Soc of Chem Ind, Basle, Switz p 15/1173-15/1182 1980

E.I. Conference No.: 00129

Language: English

(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0238971 EIM8409-070801

MODELING OF FIRE FOR RISK ASSESSMENT IN PETROCHEMICAL INDUSTRIES.

Hofmann, J.

Battelle-Inst e. V. , Frankfurt am Main, West Ger

Conference Title: Heavy Gas and Risk Assessment - 2, Proceedings of the 2nd Symposium.

Conference Location: Frankfurt am Main, West Ger Conference Date: 1982 May 25-26

Sponsor: Battelle-Inst e. V. , Frankfurt am Main, West Ger

Source: Heavy Gas and Risk Assessment 2 Publ by D. Reidel Publ Co, Dordrecht, Neth and Boston, Mass, USA p 249-260 1983

CODEN: HGRAE6 ISBN: 90-277-1594-7

E.I. Conference No.: 03800

Language: English

(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0095609 EIM8304-022820

PCB EQUIPMENT INVENTORY AND MANAGEMENT PLAN FOR STATE OF CALIFORNIA FACILITIES.

Woodyard, John P.; Hypnarowski, Paul; Tappa, Jerry
SCS Eng Inc, Long Beach, Calif, USA
Conference Title: Proceedings: 1981 PCB Seminar.
Conference Location: Dallas, Tex, USA Conference Date: 1981 Dec 1-3
Sponsor: EPRI, Palo Alto, Calif, USA
Source: Electric Power Research Institute (Report) EPRI EL 2572. Publ by EPRI, Palo Alto, Calif, USA p 3. 65-3. 90 1982
CODEN: ERELDH
E.I. Conference No.: 01691
Language: English

Descriptors: *ELECTRIC EQUIPMENT--*Accident Prevention
Identifiers: POLYCHLORINATED BIPHENYLS (PCB); INVENTORY CONTROL; ELECTRIC TRANSFORMERS; PCB LEAKAGE; HAZARD IDENTIFICATION; REMOVAL/ REPLACEMENT COSTS ; CORRECTIVE ACTIONS; PCB CONTENT AND MEASUREMENT; SURVEYS AND SURVEY LOGISTICS; DATA ANALYSIS AND RECORDKEEPING; STATE PCB OWNERSHIP AND DISPOSAL
Classification Codes: 704 (Electric Components & Equipment); 914 (Safety Engineering); 804 (Chemical Products); 911 (Industrial Economics) 70 (ELECTRICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)
(EEM)

0372412 EIM8603-019017

PROCESS MODIFICATIONS AND NEW CHEMICALS.

Burch, William M.
US EPA, Office of Toxic Substances, Washington, DC, USA
Conference Title: 1985 Annual Meeting - American Institute of Chemical Engineers.
Conference Location: Chicago, IL, USA Conference Date: 1985 Nov 10-14
Sponsor: AIChE, New York, NY, USA
Source: Annual Meeting - American Institute of Chemical Engineers 1985. Publ by AIChE, New York, NY, USA Pap 101a, 15p 1985
CODEN: AMAEDX ISSN: 0196-7282
E.I. Conference No.: 07699
Language: English

Chemical engineers can use process modification to reduce risks associated with 'new chemicals'. This paper discusses the new chemical

review program and process modifications which have been, or could be, used by industry to reduce risks. The risks discussed are not those more frequently discussed in the literature, namely the risks associated with loss prevention or capital investment; but rather the risks to human health and the environment associated with potential releases of chemicals into the workplace and the environment. Options to reduce risks would interact and therefore should be considered at the same time in planning a chemical project.

Descriptors: *CHEMICALS--*Environmental Impact; LEGISLATION; ACCIDENT PREVENTION; PACKAGING
Identifiers: TOXIC SUBSTANCES CONTROL ACT; ENVIRONMENTAL PROTECTION AGENCY (EPA); PREMATURE NOTICE (PMN)
Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals) ; 804 (Chemical Products); 804 (Chemical Products); 902 (Engineering Graphics & Standards); 914 (Safety Engineering); 694 (Packaging & Storing) 80 (CHEMICAL ENGINEERING); 45 (POLLUTION & SANITARY ENGINEERING); 90 (GENERAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 69 (MATERIALS HANDLING)

(EEM)

0377249 EIM8604-023854

QUANTIFICATION OF HUMAN ERROR IN MAINTENANCE FOR PROCESS PLANT PROBABILISTIC RISK ASSESSMENT.

Williams, J. C.; Willey, J.
CEGB, Warrington, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 353-365 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

At present, little is known about human error in maintenance other than post-incident reports. For reliable assessment and control of major hazards a technique for predicting the likelihood of human failure in maintenance

is needed to reduce the uncertainty surrounding such events. Two established theoretical approaches, classical learning theory and probability theory, have been combined to develop a data-driven model of human performance. (Edited author abstract) 35 refs.

Descriptors: *RISK STUDIES--*Assessment; CHEMICAL PLANTS--Safety Devices
CHEMICALS--Safe Handling; ACCIDENT PREVENTION--Legislation
Identifiers: HUMAN ERROR; SKILL ACQUISITION; HAZARD CONTROL; POTENTIAL HAZARDS
Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 922 (Statistical Methods) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 92 (ENGINEERING MATHEMATICS)
(EEM)

0377248 EIM8604-023853
REVIEW OF HUMAN FACTORS IN RELIABILITY AND RISK ASSESSMENT.
Watson, I. A.
UKAEA, Systems Reliability Service, UK
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 323-351 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

The impasse in the present state of research into known performance modelling is discussed. This is followed by a review of the techniques of human reliability modelling now being utilised in reliability and safety assessment. The importance of task analysis is illustrated and the problem of incorporating management influences is discussed. (Edited author abstract) 23 refs.

Descriptors: *RISK STUDIES--*Assessment; ACCIDENT PREVENTION--Legislation ; CHEMICAL PLANTS--Safety Codes; CHEMICALS--Safe Handling
Identifiers: HUMAN RELIABILITY MODELING; HUMAN ERROR; MEMORY AIDS; PSYCHOLOGICAL FACTORS

Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)

(EEM)

0023891 EIM8207-005120

RISK ANALYSIS FOR CHEMICAL PLANTS.

Jaeger, P.

Tec Ueberwach-Ver Rheinland, Ger

Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.

Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19

Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz

Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 7/561-7/57 1980

E.I. Conference No.: 00129

Language: English

Descriptors: *CHEMICAL PLANTS—*Accident Prevention

Identifiers: RISK ANALYSIS; CHEMICAL PLANTS; DAMAGE EXTENT; DAMAGE OCCURANCE PROBABILITY; SYSTEM ANALYSIS; SYSTEM CONSERVATION; NITROGEN CONTROL STATION; MAINTENANCE; DECISION TABLE

Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0274784 EIM8502-006464

RISK ANALYSIS IN THE PROCESS INDUSTRIES - AN ISGRA UPDATE.

Cox, A. P.; Holden, P. L.; Lowe, D. R. T.; Opschoor, G.

Shell Int Chemie Mij. BV, The Hague, Neth

Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).

Conference Location: Philadelphia, PA, USA Conference Date: 1984 Aug 19-22

Sponsor: AIChE, New York, NY, USA

Source: American Institute of Chemical Engineers, National Meeting 1984 Summer. Publ by AIChE, New York, NY, USA Pap n 4d, 13p 1984

CODEN: ACENC9
E.I. Conference No.: 05700
Language: English

In September, 1980, the Loss Prevention Working Party of the European Federation of Chemical Engineering set up an International Study Group on Risk Analysis (ISGRA). The work done by ISGRA and the conclusions presented in their position paper of October, 1982, are discussed. 12 refs.

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: INTERNATIONAL RISK ANALYSIS STUDY GROUP; HAZARD IDENTIFICATION; CONSEQUENCE ANALYSIS; QUANTIFICATION OF RISK; APPLICATIONS OF RISK ANALYSIS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(ENV)

0169356 *84-001289
RISK ASSESSMENT FOR THE TRANSPORT OF HAZARDOUS MATERIALS ,
DOOLEY, J. ; BURTON I.
UNIV OF TORONTO, CANADA
ROYAL SOCIETY OF CANADA/ET AL RISK ASSESSMENT & PERCEPTION SYM, TORONTO, OCT 18-19, 82, P81 (9)

CONF PAPER THE RISKS ASSOCIATED WITH THE TRANSPORT OF DANGEROUS GOODS ARE DESCRIBED. THESE RISKS ARE ILLUSTRATED AGAINST THE BACKGROUND OF A TRAIN DERAILMENT IN MISSISSAUGA, ONTARIO PROVINCE, IN NOVEMBER 1979. RELEASES OF PROPANE, CHLORINE, AND TOLUENE CAUSED A MASSIVE EVACUATION OF THE AREA. MANY DANGEROUS COMMODITIES ARE NOW BEING CARRIED ALONG RAIL ROUTES WHICH WERE BUILT IN ADVANCE OF THE DENSE DEVELOPMENT OF HOUSING, INDUSTRY, COMMERCE, AND SCHOOLS. CURRENT RISK PRACTICE EMPLOYED IN ANALYSING HAZARDOUS MATERIALS TRANSPORT IS SURVEYED. PUBLIC INQUIRIES, DESCRIPTIVE ACCOUNTS, STATISTICAL ANALYSES, PHYSICAL MODELS, AND OTHER TECHNIQUES ARE USED IN SUCH ANALYSIS. (11 REFERENCES, 2 TABLES)

DESCRIPTORS: *CHEMICAL TRANSPORT ; *TRANSPORTATION SAFETY ; *RAIL TRANSPORTATION ; *MATHEMATIC MODELS-TRANSPORT ; TRANSPORTATION ACCIDENTS ; EMERGENCY PLANNING ; CHEMICAL SPILLS
REVIEW CLASSIFICATION: 18
(ENV)

0377251 EIM8604-023856

RISK ASSESSMENT MODEL APPLIED TO TRANSPORTATION PROBLEMS.

Harris, N. C.; Roodbol, H. G.
Technica Ltd, London, Engl

Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 389-395 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

This paper describes how a computerised risk assessment package SAFETI has been used to assess the risks of the rail transportation of chlorine as part of a larger exercise. A brief description of some parts of the model is given to illustrate how it has been possible to use it for a transient hazard. Some of the problem areas are discussed, and an indication is given of how the risks are presented in terms of isorisk contours and/or F-N curves. (Author abstract) 8 refs.

Descriptors: *RISK STUDIES--*Assessment; TRANSPORTATION-- Accident Prevention; CHEMICALS--Safe Handling; HAZARDOUS MATERIALS--Accidents

Identifiers: CHLORINE TRANSPORTATION; RAILROAD TANK CARS; RAIL ACCIDENT DATA; TOXICOLOGY

Classification Codes: 914 (Safety Engineering); 433 (Railroad Transportation); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 91 (ENGINEERING MANAGEMENT); 43 (TRANSPORTATION); 80 (CHEMICAL ENGINEERING)

(EEM)

0335052 EIM8511-066732

RISK ASSESSMENT TECHNIQUES FOR EXPERIMENTALISTS.

Van Horn, David J.
Rohm & Haas Co, Research Lab, Spring House, PA, USA

Conference Title: Chemical Process Hazard Review. (Based on a symposium held at the 187th Meeting of the American Chemical Society.)

Conference Location: St. Louis, MO, USA Conference Date: 1984 Apr 8-13
Sponsor: ACS, Div of Chemical Health & Safety, Washington, DC, USA; Natl Safety Council, Industrial Div, Chicago, IL, USA
Source: ACS Symposium Series 274. Publ by ACS, Washington, DC, USA p 23-31 1985
CODEN: ACSMC8 ISSN: 0097-6156 ISBN: 0-8412-0902-2
E.I. Conference No.: 06576
Language: English

There are a variety of 'safety systems' available to systematically review projects to help identify hazards. However, most systems seem too laborious to be practical and/or not applicable at all for use by scientists engaged in bench research or scale-up work. This paper describes some risk assessment techniques and a mechanism for identifying hazards that are not burdensome and can readily be used by experimentalists. 1 ref.

Descriptors: *CHEMICAL OPERATIONS--*Accident Prevention; RESEARCH LABORATORIES--Accident Prevention
Identifiers: HAZARDS DEFINITION; PRELIMINARY HAZARD ANALYSIS; RISK ASSESSMENT TECHNIQUES; HAZARD ANALYSIS CHECKLIST; SAFETY, HEALTH, ENVIRONMENTAL (SHE) REVIEW
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 901 (Engineering Profession) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 90 (GENERAL ENGINEERING)
(EEM)

0260160 EIM8412-091990
RISK-BASED ANALYSIS OF A PETROLEUM REFINERY.
Arendt, J. S.; Campbell, D. J.; Casada, M. L.; Lorenzo, D. K.
JBF Associates Inc, Knoxville, Tenn, USA
Conference Title: American Institute of Chemical Engineers, 1984 Winter National Meeting (Preprints).
Conference Location: Atlanta, Ga, USA Conference Date: 1984 Mar 11-14
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1984 Winter. Publ by AIChE, New York, NY, USA Pap 43e, 24p 1984
CODEN: ACENC9
E.I. Conference No.: 05076
Language: English
(EEM)

****** SEE SECTION I-A FOR MORE DETAIL ******

1556301 E.I. Monthly No: EI8512126491

RISK MANAGEMENT OF GROUNDWATER CONTAMINATION IN A MULTIOBJECTIVE FRAMEWORK.

Kaunas, John R.; Haimes, Yacov Y.
Bell Communications Research, Holmdel, NJ, USA

* Water Resources Research v 21 n 11 Nov 1985 p 1721-1730
CODEN: WRERAQ ISSN: 0043-1397
Language: ENGLISH
Document Type: JA; (Journal Article) Treatment: G; (General Review); T; (Theoretical)

This paper addresses the issue of uncertainty in groundwater contamination by applying risk analysis concepts to the problem of industrial chemical spills. A hypothetical aquifer system is considered that includes a factory and two water supply wells. Accidental spills of solvent at the factory enter the aquifer, causing well solute concentrations to exceed a mandated limit. Regulation forces the company owning the factory to reduce the frequency and magnitude of the spills. Its managers need to determine the optimal levels of investment in spill control technologies that will achieve three objectives: minimize the cost of contamination prevention, minimize the proportion (ratio) of time in which a maximum contaminant limit (MCL) is exceeded, and minimize the sensitivity of the MCL exceedance ratio to uncertainties in aquifer dispersivity. Simulation with a stochastic time series of spills gives sample values of the MCL exceedance ratio for values of the investment decision variables and dispersivity; the investment decisions determine the statistics of the time series. Use of regression enables calculation of a continuous function relating the contamination time ratio objective to investments and dispersivity. The third objective is an approximation to the standard deviation of the MCL exceedance ratio and is computed through the risk dispersion index method (RDIM). (Edited author abstract) Refs.

Descriptors: *WATER RESOURCES--*Groundwater; AQUIFERS--Contamination; INDUSTRIAL WASTES--Chemicals; STATISTICAL METHODS--Time Series Analysis

Identifiers: INDUSTRIAL CHEMICAL SPILLS; RANDOM SOLVENT SPILLS; PROPORTIONAL TIME OF CONTAMINATION; SPILL CONTROL TECHNOLOGIES

Classification Codes: 444 (Water Resources); 453 (Water Pollution); 922 (Statistical Methods) 44 (WATER & WATERWORKS ENGINEERING); 45 (POLLUTION & SANITARY ENGINEERING); 92 (ENGINEERING MATHEMATICS)

(COM)

0324556 EIM8509-056236

SAFETY OF NATURAL GAS RETAIL STORAGE, REFUELING AND USE IN ROAD VEHICLES.

Hallett, Patrick H.; Heenan, J.
Transport Canada, Can
Conference Title: Proceedings of the Twenty-Second Automotive Technology Development Contractors' Coordination Meeting.
Conference Location: Dearborn, MI, USA Conference Date: 1984 Oct 29-Nov 2
Source: Proceedings - Society of Automotive Engineers P-155. Publ by SAE, Warrendale, PA, USA p 81-88 1985
E.I. Conference No.: 06858
(EEM)

******** SEE SECTION I-A FOR MORE DETAIL ********

0173178 *84-005087

A SPILL HAZARD RANKING SYSTEM FOR CHEMICALS,

STIVER, WARREN ; MACKAY DONALD
UNIV OF TORONTO, CANADA
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P261 (6)

CONF PAPER RECENT TRAIN DERAILMENT EVENTS IN CANADA INVOLVING THE RELEASE OF CHEMICALS HAVE HEIGHTENED PUBLIC CONCERN ABOUT HAZARDOUS MATERIAL TRANSPORT. A SPILL HAZARD RANKING SYSTEM FOR CHEMICALS IS PROPOSED FOR PROTECTING PUBLIC HEALTH AND AIDING INDUSTRY IN THE EVENT OF AN ACCIDENT. THE SIMPLE SQUARE ROOT OF THE RATIO OF A CHEMICAL'S VAPOR PRESSURE TO ITS TOXIC OR FLAMMABLE CONCENTRATION GIVES A MEASURE OF RISK. THE RATIO IS RELATED TO THE MINIMUM APPROACH DISTANCE AND CONSIDERS THE DISPERSION, VOLATILITY, AND TOXICITY OF A SPECIFIC CHEMICAL. (6 REFERENCES, 2 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *TRANSPORTATION ACCIDENTS ; *MATHEMATIC MODELS-CHEMICAL ; *ATMOSPHERIC DIFFUSION ; *VAPORIZATION ; *ATMOSPHERIC PRESSURE ; FLAMMABILITY ; MAXIMUM PERMISSIBLE EXPOSURE
REVIEW CLASSIFICATION: 02
(ENV)

0180242 *85-029981

SUMMARY AND OPTIONS (PREVENTING ILLNESS AND INJURY IN THE WORKPLACE),

OTA REPORT H-256, APR 85, P3(24)

FED GOVT REPORT ABOUT 6000 DEATHS OCCUR ANNUALLY IN THE U.S. FROM OCCUPATIONAL INJURIES. IN 1983, THERE WERE 2.1 MILLION LOST WORKDAY INJURIES AND 2.6 MILLION MEDICAL TREATMENT INJURIES IN THE PRIVATE SECTOR. THE CONTROL OF WORKPLACE HEALTH AND SAFETY HAZARDS ENTAILS THREE STEPS: HAZARD IDENTIFICATION, DEVELOPMENT OF CONTROLS, AND THE DECISION TO CONTROL. OPTIONS FOR CONTROLLING WORKPLACE HAZARDS, IMPROVED CONTROL TECHNOLOGIES, THE NEED FOR EDUCATION AND TRAINING, AND THE ROLE OF OSHA ARE DISCUSSED.

DESCRIPTORS: *HEALTH SAFETY, OCCUPATIONAL ; *U S OCCUPTN SAFETY HTH ADMI *REGULATIONS, ENV-FED ; *EDUCATION, ENV ; DISEASES ; PROTECTIVE CLOTHING

REVIEW CLASSIFICATION: 02

(ENV)

0156317 *82-002139

SUPPORT DOCUMENT, APPROACHES TO EXPOSURE ASSESSMENT: TOXIC SUBSTANCES CONTROL ACT SECTION 4,

EPA REPORT 560/11-80-017, JUL 80 (24)

SPECIAL REPORT THE FACTORS INVOLVED IN PERFORMING HUMAN EXPOSURE ASSESSMENTS IN ACCORDANCE WITH SECTION 4 OF THE TOXIC SUBSTANCES CONTROL ACT OF 1976 ARE DESCRIBED. THE EXPOSURE ASSESSMENT HELPS DETERMINE WHETHER THE SUBSTANCE CONCERNED IS A HAZARD, IDENTIFIES WHO WOULD BE RESPONSIBLE FOR TESTING, AND CONTRIBUTES TO THE DESIGN OF THE TEST. OCCUPATIONAL AND CONSUMER EXPOSURE PATHWAYS ARE DISCUSSED. EXPOSURE RESULTING FROM THE MANUFACTURE, PROCESSING, DISTRIBUTION, USE, AND DISPOSAL OF THE SUBSTANCE IS CONSIDERED. (4 REFERENCES)

DESCRIPTORS: *CHEMICAL RESIDUES ; *TOXIC SUBSTANCES CONT ACT 76 ; *CHEMICAL STANDARDS ; *CHEMICAL WASTES ; *HEALTH SAFETY, OCCUPATIONAL ; PRODUCT SAFETY ; HAZARDOUS WASTE DISPOSAL

REVIEW CLASSIFICATION: 02

(ENV)

1741650 DATABASE: MI File 47 *Use Format 9 for FULL TEXT*
Toxic chemicals: just how real a danger?
Work, Clemens P.; Taylor, Ronald A.
* US News and World Report v96 p64(4) May 21 1984
CODEN: XNWRA
illustration; photograph
AVAILABILITY: FULL TEXT Online
LINE COUNT: 00230

DESCRIPTORS: hazardous wastes--environmental aspects; factory and trade waste--environmental aspects
(MAG)

1138663 PB85-212355/XAB
Transportation of Hazardous Materials: Planning and Accident Analysis
Crusberg, T. C. ; Hoffman, A. H. ; Murray, B. E. ; Cull, B. D. ; Barnes, C. E.
Transportation Research Board, Washington, DC.
Corp. Source Codes: 044780000
Report No.: TRB/TRR-977; ISBN-0-309-03759-X
1984 52p
Library of Congress catalog card no. 85-2923.
Languages: English
NTIS Prices: PC A04/MF A01 Journal Announcement: GRAI8519
Country of Publication: United States

The 6 papers in this report deal with the following areas: planning for a transportation-related hazardous material spill in a municipal watershed; hazardous materials: developing transportation safety programs on a limited budget; risk of multiple small-package spills of hazardous substances; estimating the release rates and costs of transporting hazardous waste; chemical spill response information system of the Association of American Railroads; and; a survey of foreign hazardous materials transportation safety research since 1978.

Descriptors: Risk; Water supplies; Safety; Wastes; Rail transportation; Research; Highway transportation
Identifiers: *Hazardous materials transportation; Probabilistic risk assessments; Hazardous materials spills; Emergency preparedness; Chemical spills; Accident analysis; NTISNASTRB; NTISNASNRC

Section Headings: 13L (Mechanical, Industrial, Civil, and Marine Engineering--Safety Equipment); 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 85D (Transportation--Transportation Safety); 85GE (Transportation--General); 43G (Problem Solving Information for State and Local Governments--Transportation); 68GE (Environmental Pollution and Control--General)

(NTIS)

0263496 EIM8412-095326

USE OF ACUTE TOXICITY DATA IN THE RISK ASSESSMENT OF THE EFFECTS OF ACCIDENTAL RELEASES OF TOXIC GASES.

Harris, N. C.; Moses, A. M.

Imperial Chemical Industries Ltd, Mond Div, Runcorn, Engl

Conference Title: 4th International Symposium on Loss Prevention and Safety Promotion in the Process Industries (EFCE Event n 290). (Volume 1: Safety in Operations and Processes.)

Conference Location: Harrogate, North Yorks, Engl Conference Date: 1983 Sep 12-16

Sponsor: Inst of Chemical Engineers, Rugby, Warwickshire, Engl; European Federation of Chemical Engineering

Source: Institution of Chemical Engineers Symposium Series n 80. Publ by Inst of Chemical Engineers (EFCE Publ Series n 33), Rugby, Warwickshire, Engl. Distributed by Pergamon Press, Oxford, Engl & New York, NY, USA p I36-I45 1983

CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-08-030291-2

E.I. Conference No.: 05523

Language: English

Descriptors: *CHEMICALS--*Toxicity

Identifiers: HIGH RISK INDUSTRIES; LARGE CONSEQUENCE EVENTS; ACUTE TOXICITY DATA; TOXIC GAS RELEASE; PROBABILISTIC RISK ASSESSMENT; FAULT TREES; EVENT TREES; TOXICITY PROBIT EQUATIONS; GAS DISPERSION; CONTINUOUS RELEASE; INSTANTANEOUS RELEASE

Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 914 (Safety Engineering); 451 (Air Pollution) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 45 (POLLUTION & SANITARY ENGINEERING)

(EEM)

0221030 EIM8407-052860

USE OF HAZARD ASSESSMENT IN ASSESSING RISK.

Tyler, B. J.; Simmons, R. F.
Univ of Manchester Inst of Science & Technology, Dep of Chemistry, Manchester, Engl

Conference Title: INTERFLAM '82, International Conference on Flammability, Conference Workbook. ((Additional Abstracts).)
Conference Location: Guildford, Surrey, Engl Conference Date: 1982 Mar 30-Apr 1
Source: p 203-206 1982
E.I. Conference No.: 04340
Language: English

Descriptors: *ACCIDENT PREVENTION--*Evaluation
Identifiers: HAZARD IDENTIFICATION; SAFETY AUDITS; HAZARD ANALYSIS; FLAMMABLE MATERIALS; CHEMICAL PLANTS; RELIABILITY ENGINEERING
Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)
(EEM)

0274783 EIM8502-006463

USE OF RISK ASSESSMENT IN THE CHEMICAL INDUSTRIES.

Freeman, Raymond A.
Monsanto Co, St. Louis, MO, USA

Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).
Conference Location: Philadelphia, PA, USA Conference Date: 1984 Aug 19-22
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1984 Summer. Publ by AIChE, New York, NY, USA Pap n 4c, 30p 1984
CODEN: ACENC9
E.I. Conference No.: 05700
Language: English

This paper discusses the use of risk analysis techniques to set priorities on safety related problems. Specifically, the paper discusses how to: determine what kind of study, if any, is needed; review the design or the plant facility to determine what are the safety problems needing more attention; develop models required to quantify the risk; collect and

evaluate data; make a quantitative evaluation of the safety problem of interest; and formulate the final recommendations. 16 refs.

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: PROBLEM DEFINITION; HAZARD IDENTIFICATION; FAULT TREES; EVENT TREES; DATA COLLECTION AND EVALUATION; RECOMMENDATIONS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0228419 EIM8408-060249
USE OF SYSTEMATIC HAZARD STUDIES IN A LARGE CHEMICAL COMPANY.
Harris, N. C.
Imperial Chemical Industries PLC, Mond Div, Runcorn, Cheshire, Engl
Conference Title: Proceedings - 32nd Canadian Chemical Engineering Conference.
Conference Location: Vancouver, BC, Can Conference Date: 1982 Oct 3-6
Sponsor: Canadian Soc for Chemical Engineering, Ottawa, Ont, Can
Source: Proceedings - Canadian Chemical Engineering Conference 32nd v 3. Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 1231-1237 1982
CODEN: PCECE7
E.I. Conference No.: 03982
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: HAZARD ANALYSIS PROCEDURES; TOXIC GAS EMISSION HAZARD ASSESSMENT; RAPID RANKING OF HAZARDS; CRITERIA; RESOURCES REQUIRED; TECHNIQUES APPLIED; STUDY SEQUENCE; TRAINING
Classification Codes: 402 (Buildings & Towers); 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 40 (CIVIL ENGINEERING); 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0116283 EIM8306-043133

USES AND LIMITATIONS OF ANALYTICAL METHODS IN HAZARD ASSESSMENT AND LOSS PREVENTION.

Cox, R. A.
Technica, Ltd, London, Engl
Conference Title: Developments '82. (Institution of Chemical Engineers Jubilee Symposium).
Conference Location: London, Engl Conference Date: 1982 Apr 6-8
Sponsor: Inst of Chemical Engineers, Rugby, Warwickshire, Engl
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 21. Publ by Inst of Chemical Engineers (Symposium Series n 73), Rugby, Warwickshire, Engl p B59-B73 1982
CODEN: EPSEDI ISBN: 0-85295-148-5
E.I. Conference No.: 02197
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: HAZARD ASSESSMENT; ANALYTICAL METHODS; LOSS PREVENTION; HAZARD SURVEY/HAZARD INVENTORY; DESIGN CHECK LIST; HAZARD AND OPERABILITY STUDY/FAILURE MODES AND EFFECTS ANALYSIS; RELIABILITY STUDIES; SYSTEMS RELIABILITY/FAULT TREE ANALYSIS; EVENT TREE ANALYSIS; CAUSE-CONSEQUENCE DIAGRAMS; RISK ASSESSMENT
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 511 (Oil Field Equipment & Production Operations); 512 (Petroleum & Related Deposits); 513 (Petroleum Refining) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 51 (PETROLEUM ENGINEERING)
(EEM)

0023883 EIM8207-005112

WHAT IS WRONG WITH RISK ANALYSIS?

Pilz, V.
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/448-6/45 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention

Identifiers: RISK ANALYSIS; EMPIRICAL RISK EVALUATION; RISK ESTIMATION BY HAZARD ANALYSIS; CHEMICAL PLANTS; ACCIDENT PROBABILITY; SAFETY STRATEGY

Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

II. PREVENTION

II. PREVENTION

A. PROCESS, INDUSTRIAL TECHNIQUES AND PRACTICES:

0100921 *75-000922
AERIAL DETECTION OF SPILL SOURCES,
RUDDER, C. L. ; WALLACE A . G.; REINHEIMER C. J.
EPA ENV PROTECTION TECHNOLOGY SERIES REPORT EPA-R2-73-289, USGPO, SEP 73 (29)
SPECIAL REPORT A UNIQUE INTERPRETATION KEY EMPHASIZING THE ENVIRONMENTAL ASPECTS OF THE PETROLEUM INDUSTRY WAS DEVELOPED FOR USE WITH AN AERIAL SURVEILLANCE SPILL PREVENTION SYSTEM. AERIAL BASELINE AND STEREOGRAM, AERIAL MULTIBAND, AERIAL OBLIQUE, AND GROUND PHOTOGRAPHS OF OIL REFINERIES WERE INCLUDED IN THE KEY. PROCESSING SYSTEMS TO CONVERT CRUDE OIL INTO FUEL AND LPG, GASOLINE, HEAVY FUEL OILS, LUBRICATING OILS, AND ASPHALT WERE IDENTIFIED. THREE PETROCHEMICAL FACILITIES WITHIN THE REFINERY WERE ALSO NOTED. POTENTIAL SPILL SOURCES RELATED TO PROCESSING SYSTEMS, PRODUCT STORAGE, AND DISPOSITION OF WASTE AND BY-PRODUCTS WERE CITED. CONCURRENT WITH THE FLIGHT PROGRAM, 15 SAMPLES OF SPILLED MATERIAL WERE OBTAINED WITH THE APPROPRIATE GROUND TRUTH DATA. CHEMICAL AND SPECTRAL ANALYSES OF THE SAMPLES WERE CORRELATED WITH THE MULTIBAND IMAGE ANALYSIS. THE USE OF AERIAL PHOTOGRAPHY FOR TEMPORAL CHANGE DETECTION WAS EVALUATED AND INCLUDED IN THE APPROPRIATE SECTIONS. (1 DIAGRAM , 12 GRAPHS, 2 TABLES)

DESCRIPTORS: *AERIAL SURVEILLANCE ; *OIL SPILL PREVENTION ; *OIL REFININ
*ST LOUIS ; *SPECTROPHOTOMETRY
REVIEW CLASSIFICATION: 19
(ENV)

0182046 86-040598
AMERICA'S TOXIC TREMORS,
STARR, MARK ; ET AL, ; HAGER, MARY ; FRIDAY, CAROLYN ; COOK, WILLIAM J.
* NEWSWEEK, AUG 26, 85, V106, N9, P18(2)

JOURNAL ARTICLE: A SPATE OF TOXIC CHEMICAL SPILLS IN THE U.S. DURING AUGUST 1985 HAS REKINDLED PUBLIC FEARS ABOUT HAZARDOUS MATERIALS. IN THE WAKE OF THE DECEMBER 1984 CONTAMINATION INCIDENT AT BHOPAL, INDIA, THE U.S. CHEMICAL INDUSTRY HAS STEPPED UP ITS SAFETY PROGRAMS. FEDERAL OVERREACTION IN THE MATTER OF TOXIC THREATS HARDLY SEEMS LIKELY. CONGRESS HAS BEEN UNABLE TO AGREE ON LEGISLATION TO EXTEND SUPERFUND, AND EPA HAS SLOWED CLEANUP WORK AT MANY HAZARDOUS WASTE DUMP SITES.

DESCRIPTORS: *CHEMICAL SPILLS ; *INDIA ; *WEST VIRGINIA ; *UNION CARBIDE CO ; *CONTAMINATION INCIDENTS ; *HAZARDOUS WASTE DISPOSAL ; EPA, FEDERAL
REVIEW CLASSIFICATION: 02
(ENV)

1039115 DE82006186

Assessment of Research and Development (R And D) Needs in Ammonia Safety and Environmental Control

Brenchley, D. L. ; Athey, G. F. ; Bomelburg, H. J.
Battelle Pacific Northwest Labs., Richland, WA.
Corp. Source Codes: 048335000; 9512268
Sponsor: Department of Energy, Washington, DC.
Report No.: PNL-4006
Sep 81 315p
Languages: English
NTIS Prices: PC A14/MF A01 Journal Announcement: GRAI8408; NSA0700
Country of Publication: United States
Contract No.: AC06-76RL01830

This report characterizes the ammonia industry operations, reviews current knowledge of ammonia release and subsequent impacts, summarizes the status of release prevention and control methods and identify research and development needs for safety and environmental control. Appendices include: accidental spills and human exposure; adiabatic mixing of liquid nitrogen and air; fire and explosion hazards; and environmental impact rating tables. (ERA citation 07:051872)

Descriptors: *Ammonia; *Environmental Impacts; Accidents; Aquaculture; Chemical Effluents; Data Compilation; Diffusion; Health Hazards; Heat Transfer; Industry; Nitrogen Oxides; Occupational Safety; Pollution Control ; Refrigeration; Removal; Research Programs; Risk Assessment; Technology Assessment; Terrestrial Ecosystems; Toxicity

Identifiers: ERDA/570000; ERDA/560300; ERDA/500200; ERDA/080500; NTISDE

Section Headings: 6J (Biological and Medical Sciences--Industrial (Occupational) Medicine); 6T (Biological and Medical Sciences--Toxicology) 6F (Biological and Medical Sciences --Environmental Biology); 57U (Medicine and Biology--Public Health and Industrial Medicine); 57Y (Medicine and Biology--Toxicology); 68G (Environmental Pollution and Control--Environmental Health and Safety)

(NTIS)

2018893 DATABASE: MI File 47 *Use Format 9 for FULL TEXT*

A Bhopal in Louisiana? Or are union charges a "smoke screen"? (labor dispute over safety of hiring contract workers)

Nelson-Horchler, Joani

Industry Week v228 p17(2) Feb 3 1986
CODEN: IWEEA
illustration; photograph
AVAILABILITY: FULL TEXT Online
LINE COUNT: 00096
SIC CODE: 2800; 8631
NAMED PEOPLE: Story, Les--management
COMPANY NAME(S): BASF Corp.--management

DESCRIPTORS: chemical industries--contracting out; trade-unions--contracts and specifications; AFL-CIO. Industrial Union Department--public relations; Oil, Chemical and Atomic Workers International Union--contracts and specifications; strikes and lockouts--chemical workers; contracting out --analysis; labor disputes--investigations

(MAG)

0181708 *86-038774
THE BHOPAL INCIDENT: IMPLICATIONS FOR DEVELOPING COUNTRIES,
BOWONDER, B. ADMINISTRATIVE STAFF COLLEGE OF INDIA, INDIA,
ENVIRONMENTALIST, SUMMER 85, V5, N2, P89(9)

JOURNAL ARTICLE: THE ACCIDENTAL RELEASE OF METHYLISOCYANATE FROM A PESTICIDE MANUFACTURING FACTORY ON DECEMBER 2, 1984, CAUSED THE DEATH OF ABOUT 2500 PEOPLE AND AFFECTED 100,000 OTHERS IN BHOPAL, INDIA. THE IMPLICATIONS OF THIS INCIDENT FOR DECISION MAKERS IN DEVELOPING NATIONS ARE DISCUSSED. IN ATTEMPTING TO TRANSFER TECHNOLOGY TO LESS INDUSTRIAL COUNTRIES, DEVELOPED NATIONS SHOULD BOTH IMPLEMENT AND ENFORCE SAFETY REGULATIONS AND REALIZE THE IMPORTANCE OF ADDITIONAL SAFETY PARAMETERS TO TAKE INTO ACCOUNT THE SOCIOECONOMIC ENVIRONMENTS OF THE DEVELOPING AREAS. ISSUES TO BE EVALUATED INCLUDE CHOICE OF TECHNOLOGY, SITING OF THE INDUSTRY, DESIGN OF THE PLANT, INFORMATION DISSEMINATION, AND MANAGEMENT OF HAZARDS.

DESCRIPTORS: *CHEMICAL SPILLS ; *CONTAMINATION INCIDENTS ; *INDIA ; *CHEMICAL DAMAGE ; *CARBARYL ; *CHEMICAL STORAGE ; APPROPRIATE TECHNOLOGY UNION CARBIDE CO
REVIEW CLASSIFICATION: 02
(ENV)

1001388 DATABASE: NNI File 111
Chemical emergency voluntary procedures set by industry group.
* Wall Street Journal p41(W) p46(E) March 26 1985
CODEN: WSJOAF
col 2 006 col in.
EDITION: Tue
SIC CODE: 2800
(NNI)

******** SEE SECTION III-A FOR MORE DETAIL ********

TITLE: A Cloud Over Bhopal: Causes, Consequences, and Constructive Solution.
AUTHOR: De Grazia, Alfred.
EDITION: 1st ed.
PLACE OF PUBLICATION: Bombay; New York : Published by Kalos Foundation for the India- America committee for the Bhopal Victims : Popular Prakashan ; distributor, c1985.
(LC)

336830
Coatings protect steel from fire for safer petrochemical plants.
Rubber & Plastics News July 12, 1976 p. 20

Smithers Scientific Services Inc is involved in evaluating fire resistant coatings for use on exposed structural steel beams and supports. The company's special projects manager, WA Rains, points out the importance of protecting plant structure. Typical structural steel loses virtually half its strength at a temperature of 1,000~F. Hydrocarbon materials commonly present in plant operations have theoretical flame temperatures as high as 4,000~F--and while such temperatures usually are not achieved, the accidental spill fire can reach temperatures of 1,600-2,000~F, within a few minutes after ignition.

A demonstration of how the rate of heat rise affects the steel protecting ability of a typical coating material is provided by comparative tests run by Smithers. First, a sample of 4 in OD pipe, coated with the protective material, was exposed to E-119 conditions. After 9 minutes, the steel reached 230~F; at 38 minutes, the steel reached 1,000~F, concluding the test. An identical specimen was exposed to the Smithers 'High Rise' heat application, and at 9 minutes, the steel measured 440~F, and it took only 22 minutes for the specimen to reach 1,000~F.

Rains says there is increasing interest in the idea of field coating existing plant structural steel. The engineers are realizing that, even if the fire resistant coatings do nothing more than buy them 15-20 minutes at the start of a fire, that can often give them the time they need to effect an orderly shutdown and isolate the blaze in one area, rather than having the whole complex go up.

*1USA *United States *2852100 *Industrial Maintenance Paint *45 *R&D expend; *Smithers Scientific Svc 1USA United States 2899980 Flameproofing Chemicals NEC 33 applications
(PRO)

0023892 EIM8207-005121
COMPUTER-AIDED OPERABILITY STUDIES FOR LOSS CONTROL.
Lihou, D. A.
Univ of Astonih Birmingham, Engl
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 7/579-7/61 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL INDUSTRY—*Accident Prevention
Identifiers: COMPUTER-AIDED OPERABILITY STUDIES; LOSS CONTROL; COMPUTER AIDS; FLOW DEVIATIONS IN PIPELINES; BY-PASS LINES; COMPUTER-AIDED FAULT FINDING; SOLVAY PROCESS SIMULATION; AMMONIATION COLUMN PERFORMANCE; FAULT SYMPTOM MATRICES; EFFECTIVE INSTRUMENTATION
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

133355 W79-03248
Contingency Plan for Control and Treatment of Accidental Spills of Toxic Chemicals from Electroplating Processes
Raby, R. A.
Army Materiel Command, Texarkana, TX.
Available from the National Technical Information Service, Springfield, VA 22161 as AD-A009 197, Price codes: A03 in paper copy, A01 in microfiche. Final Report No. USAMC-ITC-02-08-75-216, March 1975. 45 p, 3 fig, 1 tab, 11 ref, 1 append.,
Journal Announcement: SWRA1207
(WAT)

****** SEE SECTION III-A FOR MORE DETAILS ******

0107293 *75-007153
CONTROL OF OIL AND OTHER HAZARDOUS MATERIALS,
HYLAND, JOHN R.
EPA OFFICE OF WATER PROGRAM OPERATIONS, CINCINNATI,
NTIS REPORT PB-238 096, JUN 74 (183)
(ENV)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0093620 EIM8303-020829
DEPRESSING ANALYSIS APPLIED TO CRYOGENIC PLANT SAFETY.
Chiu, Chen-hwa
Exxon Prod Res Co, Houston, Tex, USA
Conference Title: American Institute of Chemical Engineers 1982 Spring National Meeting and Chemical Plant Equipment Exposition, Preprints.
Conference Location: Anaheim, Calif, USA Conference Date: 1982 Jun 6-10
Sponsor: AIChE, New York, NY, USA
Source: Publ by AIChE, New York, NY, USA Pap 11e, 23p 1982
E.I. Conference No.: 01016
Language: English

Descriptors: *LOW TEMPERATURE ENGINEERING--*Accident Prevention
Identifiers: VAPOR DEPRESSURIZING SYSTEM; SAFE FACILITIES DESIGN; NUMERICAL DEPRESSURIZING ANALYSIS; HEAT INPUT; VAPOR DENSITY REDUCTION; LIQUID PHASE FLASHING
Classification Codes: 644 (Refrigeration & Cryogenics); 901 (Engineering Profession); 914 (Safety Engineering) 64 (HEAT & THERMODYNAMICS); 90 (GENERAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0300763 EIM8506-032443

DESIGN OF AN EMERGENCY VENTING SYSTEM FOR A BATCH REACTION INVOLVING A HIGHLY REACTIVE CHEMICAL.

Davies, R.
Glaxochem Ltd, Ulverston, Engl

Conference Title: ISCRE 8, The Eighth International Symposium on Chemical Reaction Engineering.
Conference Location: Edinburgh, Scotl Conference Date: 1984 Sep 10-13
Sponsor: Inst of Chemical Engineers, Rugby, Engl; European Federation of Chemical Engineering, Working Party on Chemical Reaction Engineering
Source: Institution of Chemical Engineers Symposium Series n 87. Publ by Inst of Chemical Engineers (EFCE Event n 299), Rugby, Engl p 361-368 1984
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-176-0
E.I. Conference No.: 06045
Language: English

Batch chemical reactions involving highly reactive chemicals sometimes must be used in the pharmaceutical industry. In one such case, a hazard analysis identified inadvertent contacting of the reactive chemical with water as a major hazard, requiring provision of an emergency venting system to cope with gaseous reaction products. Experimental work demonstrated that the reaction could, for practical purposes, be regarded as instantaneous. The plant design must therefore include control measures to ensure that the rate of gas evolution can be accommodated by the emergency vent. 1 ref.

Descriptors: *CHEMICALS--*Safe Handling; CHEMICAL PLANTS-- Accident Prevention; DRUG PRODUCTS--Manufacture; HAZARDOUS MATERIALS; SAFETY VALVES--Design
Identifiers: ISOCYANATES; HAZARD ANALYSIS; PHARMACEUTICAL INDUSTRY; REACTOR VENTING; PRESSURE RELIEF
Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 619 (Pipes, Tanks & Accessories); 461 (Biotechnology) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 61 (PLANT & POWER ENGINEERING); 46 (BIOENGINEERING)
(EEM)

0101140 EIM8304-028352

DEVELOPMENT OF LOW-COST ANALYSIS METHODS FOR PROCESS PLANT.

Cox, R. A.; Comer, P. J.
TECHNICA, Ltd, London, Engl
Conference Title: Assessment of Major Hazards. (EFCE Event No. 272)
Conference Location: Manchester, Engl Conference Date: 1982 Apr 14-16
Sponsor: Inst of Chem Eng, Rugby, Warwickshire, Engl
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 25. Publ by Inst of Chem Eng (Symp Ser n 71), Rugby, Warwickshire, Engl p 353-376 1982
CODEN: EPSEDI ISBN: 0-08-028768-9
E.I. Conference No.: 01708
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: SIMPLIFIED CLASSICAL METHOD; ENGINEERING APPRAISAL; CONTAINMENT FAILURES; PIPEWORK FAILURES; CONSEQUENCE CALCULATIONS; PARAMETRIC CORRELATION METHODS; UNRELIABILITY INDEX; HAZARD POTENTIAL INDEX ; OPERATIONAL MANAGEMENT ROLE; ALTERNATIVE METHODS; COSTS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0350046 EIM8512-081726

FAILURE OF HIGH PRESSURE SYNTHESIS PIPE.

Prescott, G. R.; Blommaert, P.; Grisolia, L.
C. F. Braun & Co, Alhambra, CA, USA
Conference Title: 1985 Summer National Meeting of the AIChE.
Conference Location: Seattle, WA, USA Conference Date: 1985 Aug 25-28
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1985 Summer. Publ by AIChE, New York, NY, USA 20b, 13p 1985
CODEN: ACENC9
E.I. Conference No.: 07292
Language: English

A sudden explosion, followed by a severe fire occurred on December 9, 1984 after 13 years of operation. The high pressure feed line to the ammonia converter in the synthesis loop of one of N.S.M. Ammonia Units ruptured. As a consequence one of the operators was fatally injured. This paper describes the circumstances leading to the failure and the corrective action that has been adopted to avoid similar accidents in the future. (Edited author abstract)

Descriptors: *CHEMICAL PLANTS--*Piping Systems; CHEMICALS--Explosions; PIPING SYSTEMS--Failure; AMMONIA--Manufacture; CHEMICAL INDUSTRY--Accident Prevention; FAILURE ANALYSIS
Identifiers: AMMONIA CONVERTER; SYNTHESIS LOOP; HIGH PRESSURE SYNTHESIS PIPE
Classification Codes: 802 (Chemical Apparatus & Plants); 619 (Pipes, Tanks & Accessories); 421 (Materials Properties); 914 (Safety Engineering); 804 (Chemical Products) 80 (CHEMICAL ENGINEERING); 61 (PLANT & POWER ENGINEERING); 42 (MATERIALS PROPERTIES & TESTING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0127563 *78-002535
A FAST ALARM SYSTEM TO OPTIMIZE THE PROTECTION OF THE PUBLIC IN THE VICINITY OF A NUCLEAR POWER PLANT
BABOCSAY, L. ; CHAKRABORTY S.; JESCHKI W.; PRETRE S.
EIDGENOSSISCHES AMT FUR ENERGIEWIRTSCHAFT, SWITZERLAND,
PRESENTED AT IAEA/OECD HANDLING OF RADIATION ACCIDENTS SYM,
VIENNA, FEB 28-MAR 4, 77, P315 (10)
(ENV)

******** SEE SECTION III-B FOR MORE DETAIL ******HHHHHH**

0272580 EIM8501-004260
FUTURE HEALTH AND SAFETY TRAINING AND MANAGEMENT IN INDUSTRY.
Hawthorn, R.; Eng, P.
Industrial Accident Prevention Assoc, Toronto, Ont, Can
Conference Title: Proceedings - 33rd Canadian Chemical Engineering Conference 1983.
Conference Location: Toronto, Ont, Can Conference Date: 1983 Oct 2-5
Sponsor: Canadian Soc for Chemical Engineering, Ottawa, Ont, Can
Source: Proceedings - Canadian Chemical Engineering Conference 33rd v 2. Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 795-800 1983
CODEN: PCECE7
E.I. Conference No.: 04160
Language: English

A prolonged demand by society in Ontario for change and improvement in the workplace has resulted in the Occupational Health and Safety Act of 1978. The new laws have imposed new duties on members of society. Employers, workers, supervisors and Joint Health and Safety committee members all have new duties and in most cases require some education to help them understand and perform these duties adequately. Generally, it is not only the lack of education in occupational health and safety, but also the attitude of both workers and management towards occupational health and safety, which must be overcome.

Descriptors: *INDUSTRIAL HYGIENE--*Personnel Training; ACCIDENT PREVENTION
Identifiers: MANAGEMENT ACTION REQUIRED; FORECASTING; SOCIAL PRESSURES; EDUCATION; WORKERS' COMPENSATION ACT SECTION 123; OCCUPATIONAL HEALTH AND SAFETY ACT OF 1978
Classification Codes: 914 (Safety Engineering); 912 (Industrial Engineering & Management) 91 (ENGINEERING MANAGEMENT)
(EEM)

0180869 EIM8402-012699
FUZZY FAULT TREE ANALYSIS AND ITS APPLICATION TO THE PREVENTION OF DUST EXPLOSION.
Tanaka, H.; Lai, F. S.; Fan, L. T.
Kansas State Univ, Dep of Chemical Engineering, Manhattan, Kans, USA
Conference Title: American Institute of Chemical Engineers, 1983 Spring National Meeting and Petro Expo '83 (Preprints).
Conference Location: Houston, Tex, USA Conference Date: 1983 Mar 27-31
Sponsor: AIChE, New York, NY, USA
Source: American Institute of chemical Engineers, National Meeting 1983 Spring. Publ by AIChE, New York, NY, USA Pap 75d, 31p 1983
CODEN: ACENC9
E.I. Conference No.: 03056
Language: English

Descriptors: *GRAIN ELEVATORS--*Accident Prevention
Identifiers: IGNITION SOURCES; GRAIN DUST EXPLOSIONS; FUZZY SET THEORY; FUNDAMENTAL EVENTS; INTERMEDIATE EVENTS; FAILURE PROBABILITIES
Classification Codes: 694 (Packaging & Storing); 821 (Agricultural Equipment & Methods); 451 (Air Pollution); 914 (Safety Engineering); 421 (Materials Properties); 922 (Statistical Methods) 69 (MATERIALS HANDLING); 82 (AGRICULTURE & FOOD TECHNOLOGY); 45 (POLLUTION & SANITARY ENGINEERING); 91 (ENGINEERING MANAGEMENT); 42 (MATERIALS PROPERTIES & TESTING); 92 (ENGINEERING MATHEMATICS)
(EEM)

0180867 EIM8402-012697
HAZARD IDENTIFICATION DURING PROCESS DESIGN.
Huetinck, Henk
Fluor Engineers Inc, Advanced Technology Div, Irvine, Calif, USA
Conference Title: American Institute of Chemical Engineers, 1983 Spring National Meeting and Petro Expo '83 (Preprints).
Conference Location: Houston, Tex, USA Conference Date: 1983 Mar 27-31
Source: American Institute of Chemical Engineers, National Meeting 1983 Spring. Publ by AIChE, New York, NY, USA Pap 75b, 19p 1983
E.I. Conference No.: 03056
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0169300 84-001233
HAZARDOUS MATERIALS CONTAINMENT VIA SPILL PREVENTION AND FAILSAFE ENGINEERING ,
GOODIER J. LESLIE ; CECE JOHN M.
(PRESEARCH INC, VA) AND,; (DOE)
* J HAZARDOUS MATERIALS, 1983, V7, P145 (18)

VARIOUS SPILL PREVENTION TECHNIQUES FOR USE WITH OIL AND HAZARDOUS SUBSTANCE SPILLS ARE SURVEYED. THE PRIMARY CAUSES OF MOST SPILL INCIDENTS ARE PERSONNEL ERROR, POOR OPERATING PROCEDURES, AND INADEQUATE MAINTENANCE SCHEDULES. TOPICS EXAMINED INCLUDE HAZARDOUS MATERIAL BULK STORAGE, TANK CAR AND TRUCK LOADING/OFFLOADING RACKS, DIKED AREAS, FACILITY SECURITY, AND BURIED PIPELINES AND TANKS. (3 DIAGRAMS, 1 DRAWING, 3 PHOTOS., 8 REFERENCES, 3 TABLES)

DESCRIPTORS: *HAZARDOUS WASTE MANAGEMENT ; *CHEMICAL SPILLS ; *SURVEYS ; *EMERGENCY PLANNING ; *HAZARDOUS WASTE TRANSPORT ; *OIL SPILL PREVENTION
REVIEW CLASSIFICATION: 17
(ENV)

0170740 84-002673
HAZARDOUS MATERIALS CONTAINMENT VIA SPILL PREVENTION AND FAILSAFE ENGINEERING ,
GOODIER J. L. ; CECE JOHN M.
(PRESEARCH INC, VA) AND,; (DOE)
* J HAZARDOUS MATERIALS, JAN 83, V7, N2, P145 (18)

THE ENACTMENT OF STATUTES RELATED TO THE RELEASE OF OIL OR HAZARDOUS MATERIALS HAS PROMPTED INDUSTRIAL DEVELOPMENT OF ENGINEERING INNOVATIONS FOR SPILL PREVENTION. AN ANALYSIS OF 1978-79 ONSHORE SPILL DATA REVEALS THAT PERSONNEL ERROR, INADEQUATE MAINTENANCE SCHEDULES, AND POOR OPERATING PROCEDURES ARE CONTRIBUTING CAUSES OF MANY SPILL INCIDENTS. SELECTED MATERIAL MANAGEMENT AND HANDLING PRACTICES WHICH MAY REDUCE THE NUMBER OF SPILLS ARE ADDRESSED. DEVICES FOR PREVENTING TANK CAR LEAKS AND OVERFLOW ARE DESCRIBED. MAINTENANCE CONSIDERATIONS FOR BURIED PIPELINES AND TANKS ARE ALSO SURVEYED. (3 DIAGRAMS, 4 DRAWINGS, 3 PHOTOS, 8 REFERENCES, 3 TABLES)

DESCRIPTORS: *OIL SPILL PREVENTION ; *TRANSPORTATION SAFETY ; *CHEMICAL SPILLS ; TRUCKS ; PIPELINE OPERATION
REVIEW CLASSIFICATION: 18
(ENV)

0228417 EIM8408-060247
HAZOP IN THE FIELD OF INSURANCE AND RISK REDUCTION.
Laakso, Leena
Industrial Mutual Insurance Co, Helsinki, Finl
Conference Title: Proceedings - 32nd Canadian Chemical Engineering Conference.
Conference Location: Vancouver, BC, Can Conference Date: 1982 Oct 3-6
Sponsor: Canadian Soc for Chemical Engineering, Ottawa, Ont, Can
Source: Proceedings - Canadian Chemical Engineering Conference 32nd v 3. Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 1213-1218 1982
CODEN: PCECE7
E.I. Conference No.: 03982
Language: English

Descriptors: *INDUSTRIAL INSURANCE--*Accident Prevention
Identifiers: LOSS PREVENTION SYSTEM; NEW PLANT DESIGNS; TECHNICAL SERVICES PROVIDED; SAFETY ANALYSIS; CLIENT SERVICES
Classification Codes: 911 (Industrial Economics); 402 (Buildings & Towers); 914 (Safety Engineering) 91 (ENGINEERING MANAGEMENT); 40 (CIVIL ENGINEERING)

(EEM)

168750 X
Improving the design of emergency relief systems.
Poole, G.
Process Engng., vol.66, no.5, May 1985, p.67, 69. , Coden: PSEGAP
ISSN 0370-1859
Languages: English

The design of reactor venting systems has been mostly governed by the FIA (Factory Insurance Association) method. However, these are empirical standards lacking understanding of the associated phenomena. In 1977, DIERS (the Design Institute for Emergency Relief Systems, an international group was set up under the auspices of the American Institute of Chemical Engineers. Its research concentrates on providing more accurate vent sizing methods, particularly where two phase flow is likely to occur. This article reports on the results of a recent programme of DIERS. A computer program has been developed for vent sizing and direct sizing can also be done through small scale tests. (R.A.H.)

Descriptors: safety engineering; process engineering
(FLU)

1197129 E.I. Monthly No: EI8207056959 E.I. Yearly No: EI82013586
INTERNATIONAL SYMPOSIUM ON LOSS PREVENTION AND SAFETY PROMOTION IN THE PROCESS INDUSTRIES, 3RD, 1980.
Anon
Eur Fed of Chem Eng
Int Symp on Loss Prev and Saf Promot in the Process Ind, 3rd, Basle, Switz, Sep 15-19 1980 Publ by Swiss Soc of Chem Ind (Eur Fed of Chem Eng, 228 Event), Basle, Switz, 1980 5 vol, 1822 p
For individual papers see E.I. Conference No.: 00129 in file 165
Language: ENGLISH

This conference proceedings contains 118 papers. Topics covered include: education and training; maintenance and inspection; industrial hygiene; hazard analysis and risk evaluation; material properties; runaway reactions and explosions; relief venting; suppression of dust and gas explosions; decision techniques; LPG storage and handling; fault trees; shock waves; vapor clouds; electrostatic behavior of powders; autoignition; exothermic reactions; inspection of process equipment; reliability in chemical plants; safety of the process units; gas detonations; chemical vapors; mathematical models; accidental release of dangerous materials; and polymerization. Technical and professional papers from this conference are indexed with the conference code no. 00129 in the Ei Engineering Meetings (TM) data base produced by Engineering Information, Inc.

Descriptors: *CHEMICAL PLANTS--*Accident Prevention; GASES; DUST--Explosions; EXPLOSIONS; VAPORS; INDUSTRIAL HYGIENE
Identifiers: RISK ANALYSIS; HAZARD ANALYSIS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 931 (Applied Physics); 901 (Engineering Profession); 502 (Mine & Quarry Equipment & Operations); 641 (Heat & Thermodynamics) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 93 (ENGINEERING PHYSICS); 90 (GENERAL ENGINEERING); 50 (MINING ENGINEERING) ; 64 (HEAT & THERMODYNAMICS)

(COM)

2050446 DATABASE: MI File 47 *Use Format 9 for FULL TEXT*
Living dangerously. (re-assessing our technology in light of recent accidents; includes list of milestones in technological progress)
Trafford, Abigail; Gabor, Andrea
* US News and World Report v100 p19(4) May 19 1986
CODEN: XNWRA
illustration; photograph
AVAILABILITY: FULL TEXT Online
LINE COUNT: 00162
SIC CODE: 1629

DESCRIPTORS: Technology assessment--analysis; Technology and civilization --social aspects; Atomic power-plants--Safety measures; Aeronautics--Accidents; Hazardous substances--safety measures; Industrial accidents--analysis; Hazardous waste sites--forecasts; Genetic engineering--safety measures; Astronautics--Accidents; Technology and state--forecasts; Atomic weapons--accidents

(MAG)

0247009 EIM8410-078839
MANAGING THE NEW TECHNOLOGY MAINTENANCE FUNCTION.
Ponting, T. J.
Albright & Wilson Ltd, Specialist Engineering Dep, Engl
Conference Title: Process Measurement, Control and Applications. (Part of PROMECON Control & Instrumentation Exhibition and Conference. Part of PROMECON Control & Instrumentation Exhibition and Conference.)
Conference Location: London, Engl Conference Date: 1984 Jun 19-22

Sponsor: Inst of Measurement & Control, London, Engl
Source: Publ by Inst of Measurement & Control, London, Engl p 298-308 1984
E.I. Conference No.: 04925
Language: English

Descriptors: *COMPUTERS, MICROPROCESSOR--*Maintenance
Identifiers: MICROPROCESSOR BASED CONTROL SYSTEMS; PROCESS CONTROL; STANDARDS OF SAFETY; MICROPROCESSOR SYSTEM EQUIPMENT; HAZARD IDENTIFICATION ; SAFETY IN PROCESS PLANT DESIGN; CHEMICAL INDUSTRY STANDARDS
Classification Codes: 722 (Computer Hardware); 723 (Computer Software) 913 (Production Planning & Control); 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 902 (Engineering Graphics & Standards) 72 (COMPUTERS & DATA PROCESSING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 90 (GENERAL ENGINEERING)
(EEM)

138513 B78000006
NURSES SPEARHEAD PLANT-WIDE FIRST AID TRAINING
OCCUP. HEALTH AND SAF. (USA) VOL.46, NO.3 30-1 MAY-JUNE 1977
CODEN: OHSADQ
Treatment: GENERAL,REVIEW
Document Type: JOURNAL PAPER
Languages: ENGLISH

MAINTENANCE PEOPLE ON ALL SHIFTS AT AMOCO CHEMICALS ARE IN CHARGE OF EMERGENCY CARE WHEN ACCIDENT OR DISASTER STRIKES. THEY OWE THEIR LIFE-SAVING SKILLS TO A NURSE TEAM WHICH HAS TRAINED THEM IN A RANGE OF FIRST-AID SKILLS.

Descriptors: PERSONNEL; TRAINING; ACCIDENTS; INDUSTRIAL PLANTS
Identifiers: PERSONNEL; TRAINING; ACCIDENTS
Class Codes: B0120; B0160; B7520
(INS)

1168295
Plant size, design held responsible for some recent chemical accidents.
* Chemical Marketing Reporter April 1, 1985 p. 7

The solution to the problem of plant safety in the chemical industry is plants that are smaller and simpler in design, according to TA Kletz of the U of Technology (UK), speaking before a meeting of the American Institute of Chemical Engineers. Some 15-30 percent of the oil and chemical industries' total capital costs are for safety and pollution control. Kletz points out that the best way to prevent leaks of hazardous materials is to use smaller quantities or use them at lower pressures. Reductions in inventories of hazardous materials reduce costs.

*1USA *United States *2800000 *Chemicals & Allied Products *23 *productn mgmt
(PRO)

0023877 EIM8207-005105
POSSIBILITIES OF CONTROLLING THERMIC DANGERS.
Christen, Rene
LONZA
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz P 5/379-5/38 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: THERMIC DANGERS; PROCESS ADAPTATION; DANGEROUS REACTION; BATCHWISE PRODUCTION; CONTINUOUS PRODUCTION; EMERGENCY COOLING; ON-LINE ANALYSIS; RELIEF OUTLETS; REMOTE CONTROL; INSTALLATION ADAPTATION
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0313545 EIM8508-045225

PRACTICAL APPROACH TO EMERGENCY RELIEF SYSTEM (ERS) DESIGN FOR RUNAWAY CHEMICAL REACTIONS.

Fauske, Hans K.
Fauske & Associates Inc, Burr Ridge, IL, USA

Conference Title: 1985 Spring National Meeting and Petro Expo '85 - American Institute of Chemical Engineers.
Conference Location: Houston, TX, USA Conference Date: 1985 Mar 24-28
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1985 Spring. Publ by AIChE, New York, NY, USA Pap 55f, 15p 1985
CODEN: ACENC9
E.I. Conference No.: 06737
Language: English

An ERS design approach is outlined which is realistic yet also simple enough to be used by non-specialist engineers. It can be applied to virtually unknown systems and covers the need for considering two-phase discharges and flashing flows. 11 refs.

Descriptors: *CHEMICAL REACTIONS--*Accident Prevention; SAFETY VALVES--Design; FLOW OF FLUIDS--Two Phase
Identifiers: BENCH SCALE SIMULATIONS; ZINC PEROXIDE/ZINC OXIDE DECOMPOSITION; VENT SIZING; GASSY REACTIONS; TEMPERED REACTIONS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering); 619 (Pipes, Tanks & Accessories); 631 (Fluid Flow & Hydrodynamics) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 61 (PLANT & POWER ENGINEERING); 63 (FLUID DYNAMICS & VACUUM TECHNOLOGY)

(EEM)

0282821 EIM8503-014501

PRACTICAL UTILIZATION OF SAFETY ANALYSIS RESULTS.

Taylor, J. R.
Riso Natl Lab, Roskilde, Den

Conference Title: Occupational Accident Research, Proceedings of the International Seminar.
Conference Location: Saltsjobaden, Swed Conference Date: 1983 Sep 5-9
Sponsor: Royal Inst of Technology, Occupational Accident Research Unit, Stockholm, Swed; Swedish Work Environment Fund, Swed

Source: Journal of Occupational Accidents v 6 n 1-3 Sep 1984 p 213-214 1984
CODEN: JOACD4 ISSN: 0376-6349
E.I. Conference No.: 05560
Language: English

Two full-scale quantitative safety analyses of chemical plants are described. The analyses can obviously be used as a basis for decisions on design improvement. But a naive use leaves an enormous potential for safety improvement untapped. By interpreting the safety analysis as a basis for safety management, a wider range of objectives can be achieved such as (1) defense against as yet unidentified hazards; (2) setting priorities and time scales for improvement; (3) distinguishing between trivial and serious operational disturbances; (4) achieving a better relationship between authority requirements and practical safety measures; and (5) providing a point of focus for safety campaigns. The cost of a safety analysis intended to fulfill these goals is about 30% higher than for a conventional risk analysis, and requires a much more flexible range of safety criteria.

Descriptors: *ACCIDENT PREVENTION--*Applications; CHEMICAL PLANTS--Accident Prevention
Identifiers: SAFETY ANALYSIS UTILIZATION; SAFETY MANAGEMENT; PLANNING IMPROVED SAFETY MEASURES; SERIOUSNESS OF OPERATIONAL DISTURBANCES; GOVERNMENT REGULATIONS; ABSTRACT ONLY
Classification Codes: 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 402 (Buildings & Towers) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 40 (CIVIL ENGINEERING)

(EEM)

846719 C76000964
PREVENTING AND DEALING WITH IN-PLANT HAZARDOUS SPILLS
WIRTH, G.F.
DOW CHEMICAL USA, WESTERN DIV., PITTSBURGH, PA, USA
CHEM. ENG. (USA) VOL.82, NO.17 82-5, 87-96 18 AUG. 1975
CODEN: CHEFA3
Treatment: APPLIC; PRACTICAL
Document Type: JOURNAL PAPER
Languages: ENGLISH
(4 Refs)
(INS2)

****** SEE SECTION II-C FOR MORE DETAIL ******

0182193 *86-041388
PREVENTING ENVIRONMENTAL CONTAMINATION AT RETAIL FERTILIZER FACILITIES,
LANG, SHEILA B. SOHIO CHEMICAL CO, OH,
FERTILIZER INST ENV SYM, KISSIMMEE, FL, OCT 24-26, 84, P307(13)

CONF PAPER: VARIOUS MEASURES CAN BE IMPLEMENTED TO PREVENT SPILLS OR RELEASES AT RETAIL FERTILIZER FACILITIES. SPILLS WHICH POLLUTE SURFACE WATERS AND SOILS FROM LIQUID FERTILIZER STORAGE CAN BE AVOIDED BY PROVIDING A PERMANENTLY CONNECTED HOSE WITH END VALVE AND ADAPTERS FOR THE TRUCKERS TO ATTACH TO THEIR TRUCKS. PREVENTING ENVIRONMENTAL CONTAMINATION AS A RESULT OF TANK FAILURE CAN BE ACCOMPLISHED BY REDUCING THE NUMBER OF TANK OPENINGS AND EQUIPPING THEM WITH STAINLESS STEEL VALVES AND PLUGS.

DESCRIPTORS: *FERTILIZER RESIDUES ; *CHEMICAL SPILLS ; *CHEMICAL STORAGE ; *PESTICIDE STORAGE ; DECONTAMINATION
REVIEW CLASSIFICATION: 02
(ENV)

0101136 EIM8304-028348
PROCESS SAFETY ANALYSIS: IDENTIFICATION OF INHERENT PROCESS-HAZARDS.
Husmann, C. A. W. A.; van de Putte, T.
Minist of Soc Aff & Employ, The Hague, Neth
Conference Title: Assessment of Major Hazards. (EFCE Event No. 272)
Conference Location: Manchester, Engl Conference Date: 1982 Apr 14-16
Sponsor: Inst of Chem Eng, Rugby, Warwickshire, Engl
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 25. Publ by Inst of Chem Eng (Symp Ser n 71), Rugby, Warwickshire, Engl p 285-290 1982
CODEN: EPSEDI ISBN: 0-08-028768-9
E.I. Conference No.: 01708
Language: English

Descriptors: *CHEMICAL PLANTS—*Accident Prevention
Identifiers: SAFETY LIMITS; TIMING; CHEMICAL PROPERTIES; INTERACTIONS BETWEEN SUBSTANCES; CHEMICAL REACTIONS; SIDE REACTIONS; PROCESS/CONTAINMENT INTERACTIONS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0101133 EIM8304-028345

QUANITTATIVE ASSESSMENT AND RELIABILITY ENGINEERING OF MAJOR HAZARD PLANTS IN THE CONTEXT OF HAZARD CONTROL.

Lees, F. P.
Loughborough Univ of Technol, Leicestershire, Engl

Conference Title: Assessment of Major Hazards. (EFCE Event No. 272)
Conference Location: Manchester, Engl Conference Date: 1982 Apr 14-16
Sponsor: Inst of Chem Eng, Rugby, Warwickshire, Engl
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 25. Publ by Inst of Chem Eng (Symp Ser n 71), Rugby, Warwickshire, Engl p 225-243 1982
CODEN: EPSEDI ISBN: 0-08-028768-9
E.I. Conference No.: 01708
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: REGULATORY REQUIREMENTS; PROBLEM AREAS; PUBLIC OPPOSITION; HAZARD CONTROL SYSTEM; HAZARD WARNING STRUCTURE
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0280736 EIM8503-012416

SAFETY ASPECTS OF ANALYZER HOUSE INSTALLATIONS.

Mostia, William L. Jr.
Amoco Chemicals Corp, Alvin, TX, USA

Conference Title: Productivity Through Control Technology, Proceedings of the 1983 Joint Symposium.
Conference Location: Houston, TX, USA Conference Date: 1983 Apr 18-21
Sponsor: ISA, Houston Section, Houston, TX, USA
Source: Publ by ISA, Research Triangle Park, NC, USA p 1-6 1983
ISBN: 0-87664-783-2
E.I. Conference No.: 04408
Language: English

Safety is a very important concern in the design and safe operation of an analyzer house installation. Both personnel and equipment protection must be taken into account from the very beginning of the system design to the end of the operating life of the installation. 21 refs.

Descriptors: *INDUSTRIAL PLANTS--*Accident Prevention; PERSONNEL--Protection; STANDARDS; ELECTRIC ACCIDENTS
Identifiers: EQUIPMENT PROTECTION; INSTALLATION OPERATING LIFE; RECOMMENDED PRACTICES; HAZARD IDENTIFICATION; SAFETY TRAINING; CODES
Classification Codes: 402 (Buildings & Towers); 914 (Safety Engineering) 40 (CIVIL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0385654 EIM8605-032259
SAFETY OF HYDROGEN AS A GROUND TRANSPORTATION FUEL.
Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Cryogenic Processes and Equipment - 1984. (Presented at The Fifth Intersociety Cryogenics Symposium, The Winter Annual Meeting of The American Society of Mechanical Engineers.)
Conference Location: New Orleans, LA, USA Conference Date: 1984 Dec 9-14
Sponsor: ASME, Cryogenic Committee, New York, NY, USA; ASME, Cryogenic Heat Transfer Committee, New York, NY, USA; AIChE, Cryogenic Committee, New York, NY, USA; Int Inst of Refrigeration, Paris, Fr
Source: Publ by ASME, New York, NY, USA p 123-129 1984
E.I. Conference No.: 05854
Language: English

This paper is based on work carried out for the Canadian National Research Council. Potential systems for the transmission, storage, distribution, refuelling, and in-vehicle storage were selected. Schematic designs were developed and each subjected to the hazard identification procedure known as Hazard & Operability Studies. This paper outlines the strategy, the hazard identification approach and the results achieved with particular reference to an LH//2 refuelling station. An outline is given of some of the conclusions and recommendations, including the creation of a National Hydrogen Safety Committee. (Author abstract) 6 refs.

Descriptors: *HYDROGEN FUELS--*Safe Handling; AUTOMOTIVE FUELS--Safety Codes; LOW TEMPERATURE ENGINEERING--Operations Research
Identifiers: HAZARD IDENTIFICATION APPROACH; LIQUID-HYDROGEN FILLING STATION; ONBOARD STORAGE; CANADIAN HYDROGEN SAFETY COMMITTEE; SITE SELECTION
Classification Codes: 521 (Combustion & Fuels); 522 (Gas Fuels); 523 (Liquid Fuels); 644 (Refrigeration & Cryogenics); 901 (Engineering Profession) 52 (FUEL TECHNOLOGY); 64 (HEAT & THERMODYNAMICS); 90 (GENERAL ENGINEERING)
(EEM)

0119575 *77-002034
SPILL PREVENTION AND CONTROL: A SPECIAL REPORT,
WEISS W. H.
GOODYEAR TIRE & RUBBER CO, OHIO,
POLLUTION ENGINEERING, NOV 76, V8, N11, P22 (8)

TECHNICAL FEATURE ON JANUARY 11, 1974, OIL SPILL PREVENTION REGULATIONS BECAME LAW AS SPECIFIED IN THE FEDERAL WATER POLLUTION CONTROL ACT OF 1972. SPILL PREVENTION CONTROL AND COUNTERMEASURE PLANS FOR A PLANT STORING OVER 1320 GAL OF ''OIL-TYPE'' MATERIAL MUST BE MAINTAINED AT THE PLANT AND MUST BE AVAILABLE FOR REVIEW AND IMPLEMENTATION BY EPA OR USCG. FINES UP TO $5 MILLION MAY BE IMPOSED FOR EACH ILLEGAL SPILL OR DISCHARGE. A MAJOR PENNSYLVANIA OIL COMPANY HAS COME UP WITH A PLAN TO REDUCE THE POTENTIAL FOR SPILLS AND IMPROVE THE ABILITY TO HANDLE THEM; A MAJOR CHEMICAL COMPANY BELIEVES THE KEY TO ADEQUATE SPILL HANDLING IS DECISION-MAKING; AND THE GOODYEAR TIRE AND RUBBER CO.'S SPILL PREVENTION PLAN PROVIDES THE PERTINENT INFORMATION FOR ITS PERSONNEL TO PREVENT AND HANDLE SPILLS. (11 PHOTOS, 6 REFERENCES)

DESCRIPTORS: *OIL SPILL PREVENTION ; *OIL SPILL CLEANUP ; *CHEMICAL SPILLS ; *OIL SPILL DETECTION ; REGULATIONS, ENV-FED ; OIL BOOMS ; OIL SKIMMERS ; SORPTION ; GOODYEAR TIRE & RUBBER
REVIEW CLASSIFICATION: 19
(ENV)

0180242 *85-029981
SUMMARY AND OPTIONS (PREVENTING ILLNESS AND INJURY IN THE WORKPLACE),
OTA REPORT H-256, APR 85, P3(24)

FED GOVT REPORT ABOUT 6000 DEATHS OCCUR ANNUALLY IN THE U.S. FROM OCCUPATIONAL INJURIES. IN 1983, THERE WERE 2.1 MILLION LOST WORKDAY INJURIES AND 2.6 MILLION MEDICAL TREATMENT INJURIES IN THE PRIVATE SECTOR. THE CONTROL OF WORKPLACE HEALTH AND SAFETY HAZARDS ENTAILS THREE STEPS: HAZARD IDENTIFICATION, DEVELOPMENT OF CONTROLS, AND THE DECISION TO CONTROL. OPTIONS FOR CONTROLLING WORKPLACE HAZARDS, IMPROVED CONTROL TECHNOLOGIES, THE NEED FOR EDUCATION AND TRAINING, AND THE ROLE OF OSHA ARE DISCUSSED.

DESCRIPTORS: *HEALTH SAFETY, OCCUPATIONAL ; *U S OCCUPIN SAFETY HTH ADMI *REGULATIONS, ENV-FED ; *EDUCATION, ENV ; DISEASES ; PROTECTIVE CLOTHING
REVIEW CLASSIFICATION: 02
(ENV)

0274785 EIM8502-006465

SUPERCRITICAL EXTRACTION: A NEW TECHNOLOGY INTRODUCES NEW HAZARDS.

Randhava, Ravi

Xytel Corp, M. Prospect, IL, USA

Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).

Conference Location: Philadelphia, PA, USA Conference Date: 1984 Aug 19-22

Sponsor: AIChE, New York, NY, USA

Source: American Institute of Chemical Engineers, National Meeting 1984 Summer. Publ by AIChE, New York, NY, USA Pap n 5a, 9p 1984

CODEN: ACENC9

E.I. Conference No.: 05700

Language: English

Factors which contribute to potential hazards of supercritical extraction include high pressures, newness of the technology, and limited experience with commercial installations. Use of hazard analysis to minimize the loss potential for pilot and commercial units is illustrated for a large supercritical extraction petrochemicals PDU. 1 ref.

Descriptors: *EXTRACTION--*Accident Prevention; PETROCHEMICAL PLANTS--Accident Prevention

Identifiers: PETROCHEMICALS PROCESS DEVELOPMENT UNIT; HAZARD ANALYSIS OVERVIEW; CRITICAL FEEDBACK

Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0277727 EIM8502-009407

SUPPORTING DECISION MAKING AND PROBLEM SOLVING DURING RARE HIGH RISK EVENTS.

Embrey, D. E.; Humphreys, P. C.

Human Reliability Associates Ltd, Engl

Conference Title: Ergonomics Problems in Process Operations.

Conference Location: Birmingham, Engl Conference Date: 1984 Jul 11-13

Sponsor: Inst of Chemical Engineers, Rugby, Engl; Ergonomics Soc, Hockley, Engl

Source: Institution of Chemical Engineers Symposium Series n 90. Publ by Inst of Chemical Engineers (EFCE Publ Series n 38), Rugby, Engl p 148-150 1984
CODEN: ICESDB ISSN: 0307-0492
E.I. Conference No.: 05959
Language: English

Recently developed approaches for providing a decision support system appropriate for rare events are described. These start from the expertise possessed by experienced plant operators, which is elicited by means of an interactive computer system to produce an explicit model of their knowledge base regarding the relationships between indicators, causes and consequences. This can be used to model the diagnostic process where the operator starts from an observed pattern of indicators and attempts to infer events which may have led to this pattern. Computer programs LINK and EXPLORE are briefly described.

Descriptors: *PROCESS CONTROL—*Accident Prevention; DECISION THEORY AND ANALYSIS; HUMAN ENGINEERING; INDUSTRIAL PLANTS—Control; CHEMICAL PLANTS—Control; COMPUTER PROGRAMS
Identifiers: HIGH RISK PROCESS PLANT ABNORMALITIES; RARE EVENTS; DECISION SUPPORT SYSTEMS; ABSTRACT ONLY
Classification Codes: 731 (Automatic Control Principles); 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 402 (Buildings & Towers) ; 723 (Computer Software); 461 (Biotechnology) 73 (CONTROL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 40 (CIVIL ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 46 (BIOENGINEERING)
(EEM)

0023873 EIM8207-005101

TEST METHODS IN PROCESS SAFETY ANALYSIS.

Verhoeff, J.; Janswoude, J. J.
TNO, Rijswijk, Neth

Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz

Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 5/323-5/34 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: PROCESS SAFETY ANALYSIS; CHEMICAL EXPLOSIONS; EXPLOSION PROPERTIES; DETONATION; DEFLAGRATION; THERMAL EXPLOSION; HIGH PRESSURE BOMB TEST; THERMAL STEP TEST; FRICTION INITIATION METER
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0366211 EIM8602-012816
THREE-LEVEL APPROACH TO CURRICULUM DEVELOPMENT FOR HAZARD COMMUNICATION TRAINING EMPLOYING THE WATCH (WORKPLACE ANALYSIS TO CONTROL HAZARDS) SYSTEM.
Corson, Lynn A.
Purdue Univ, Cent for Public Policy & Public Administration, West Lafayette, IN, USA
Conference Title: Proceedings of the Third Annual Hazardous Materials Management Conference. (Held as part of the Hazardous Materials Management Conference & Exhibition.)
Conference Location: Philadelphia, PA, USA Conference Date: 1985 Jun 4-6
Source: Proceedings of the Annual Hazardous Materials Management Conference 3rd. Publ by Tower Conference Management Co, Wheaton, IL, USA p 29-37 1985
CODEN: PAHCE8
E.I. Conference No.: 07549
Language: English

An employer required by the OSHA Hazard Communications Standard to provide employee training needs, first, to determine which employees have to be trained and, then, how comprehensive such training has to be. The standard provides a definition of 'employee' which implies that there are three types of workers: Type 1: Those whose 'job performance routinely involves exposure to hazardous chemicals. ' This type includes production workers and line supervisors assigned to work areas where hazardous chemicals are produced or used. Type 2: Those 'who may be exposed to hazardous chemicals during normal operating conditions. ' This type includes repair, maintenance and custodial workers whose work assignment

requires that they periodically enter work areas where hazardous chemicals are produced or used. Type 3: Those 'who may be exposed to hazardous chemicals during foreseeable emergencies. ' This type, regardless of the exemption inferred from the standard, should include office workers, grounds maintenance personnel, security personnel and all other employees on the plant premises or who may visit the premises.

Descriptors: *HAZARDOUS MATERIALS; CHEMICALS--Safe Handling; ACCIDENT PREVENTION--Safety Codes; INDUSTRIAL HYGIENE; CHEMICAL PLANTS --Personnel

Identifiers: COMMUNICATIONS; LIABILITY; OSHA HAZARD COMMUNICATIONS STANDARD

Classification Codes: 912 (Industrial Engineering & Management); 914 (Safety Engineering); 803 (Chemical Agents & Basic Industrial Chemicals) 804 (Chemical Products); 402 (Buildings & Towers) 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 40 (CIVIL ENGINEERING)

(EEM)

0179302 *85-023674

U.S. CPI START TO FEEL EFFECTS OF BHOPAL TRAGEDY,

BASTA NICHOLAS ; FARRELL PIA; DWYER PAULA; PRICE WILMA

* CHEMICAL ENGINEERING, MAR 18, 85, V92, N6, P27(4)

JOURNAL ARTICLE IN THE WAKE OF THE DECEMBER 1984 METHYL ISOCYANATE CONTAMINATION INCIDENT IN INDIA, A SET OF BILLS HAS BEEN INTRODUCED IN CONGRESS COVERING EMERGENCY RESPONSE PROCEDURES IN THE CHEMICAL PROCESS INDUSTRY. MANY FIRMS HAVE BEEN DEVELOPING TEST EQUIPMENT AND ENGINEERING DESIGN RECOMMENDATIONS FOR EMERGENCY RELIEF SET-UPS. COMPUTERIZED SAFEGUARD SYSTEMS AND MODELING SYSTEMS AVAILABLE TO THE INDUSTRY ARE SURVEYED.

DESCRIPTORS: *CHEMICAL SPILLS ; *EMERGENCY PLANNING ; *COMPUTER APPLICATIONS ; *INDIA ; *CONTAMINATION INCIDENTS ; *LEGISLATION, ENV-FED ; DATA REPORTING, MANDATORY

REVIEW CLASSIFICATION: 02

(ENV)

0384311 EIM8605-030916

USING TASK ANALYSIS TO SPECIFY PLC SOFTWARE FOR BATCH PROCESSES.

Lihou, D. A.; Jackson, P. P.
Lihou Loss Prevention Services Ltd, UK

Conference Title: Multi-Stream '85, Process Engineering Developments, The Subject Groups Symposium.
Conference Location: London, Engl Conference Date: 1985 Apr 16-18
Sponsor: Inst of Chemical Engineers, Rugby, Engl
Source: Institution of Chemical Engineers Symposium Series n 94. Publ by Inst of Chemical Engineers, Rugby, Engl p 279-288 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-190-6
E.I. Conference No.: 07539
Language: English

Programmable Logic Controllers can only be relied upon to replace the 'expert' operator if the software is accurate and precise. Task analysis is a technique for representing the consensus opinion of a team of experts on the correct way to carry out a batch process, in a format which is comprehensible to the software programmer who is unfamiliar with the process. By means of a case study, this paper illustrates the development of the operating specification for a batch process, by the application of task analysis. (Author abstract) 2 refs.

Descriptors: *CONTROL SYSTEMS, PROGRAMMED--*Applications; PERSONNEL TRAINING; ACCIDENT PREVENTION; CHEMICAL PLANTS--Loss Preventio
Identifiers: TASK ANALYSIS; PROGRAMMABLE LOGIC CONTROLLERS (PLC); BATCH PROCESSES; BATCH SAFETY; DEVELOPMENT OF SOFTWARE; COMPUTER PROGRAMMER
Classification Codes: 731 (Automatic Control Principles); 914 (Safety Engineering); 912 (Industrial Engineering & Management); 802 (Chemical Apparatus & Plants) 73 (CONTROL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)
(EEM)

II. PREVENTION

B. STORAGE AND TRANSFER:

1514238 E.I. Monthly No: EI8508067183
CHEMICAL SPILL RESPONSE INFORMATION SYSTEM OF THE ASSOCIATION OF AMERICAN RAILROADS.
Meier, G. E.
Assoc of American Railroads, Washington, DC, USA
Transp Res Rec 977 1984 p 31-38
CODEN: TRREDM ISSN: 0361-1981
(COM)

****** SEE SECTION III-A FOR MORE DETAIL ******

0159180 *82-004864
A COMMUNITY MODEL FOR HANDLING HAZARDOUS MATERIALS AND TRANSPORTATION EMERGENCIES,
RUSSELL, E. R. ; SMALTZ J. J.; LAMBERT J. P.; DEINES V. P.; JEPSEN R. L.
KANSAS STATE UNIV,
NTIS REPORT PB82-131640, OCT 81 (538)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0131054 EIM8308-057909
CONFERENCE PAPERS - MARICHEM 82, 4TH INTERNATIONAL CONFERENCE AND EXHIBITION ON THE MARINE TRANSPORTATION, HANDLING AND STORAGE OF BULK CHEMICALS.
Anon
Conference Title: Conference Papers - MariChem 82, 4th International Conference and Exhibition on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Amsterdam, Neth Conference Date: 1982 Jun 22-24
Source: MariChem 82. Publ by Gastech Ltd, Rickmansworth, Hertfordshire, Engl var pagings 1982
CODEN: MARID8
E.I. Conference No.: 01857
Language: English

Descriptors: *CHEMICALS--*Storage

Identifiers: LEGISLATION AND REGULATION; ORGANIC CORROSION AND PROTECTIVE LININGS; INDEPENDENT STORAGE COMPANIES; CRUDE/PRODUCT/ CHEMICAL TANKERS; TANK CONTAINER DEVELOPMENT; ANODIC PROTECTION; COMPUTER-AIDED SELECTION OF TANK COATING SYSTEMS; CHEMICAL SPILLAGE; CONTAMINATION OF LPG CARGO WITH AMMONIA; INERT GASES AND POLYMERIZATION INHIBITION; EIREV

Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals) ; 804 (Chemical Products); 694 (Packaging & Storing); 453 (Water Pollution); 815 (Plastics & Polymeric Materials); 691 (Bulk Materials Handling) 80 (CHEMICAL ENGINEERING); 69 (MATERIALS HANDLING); 45 (POLLUTION & SANITARY ENGINEERING); 81 (CHEMICAL PROCESS INDUSTRIES)

(EEM)

0191939 DATABASE: NNI File 111

Emergencies hot line in chemical transport.

Halverson, Guy

* Christian Science Monitor v72 p11 March 12 1980

CODEN: CSMOBF

col 1 013 col in.

illustration; photograph

EDITION: Wed

GEOGRAPHIC LOCATION: Washington

DESCRIPTORS: chemicals--transportation; Chemical Transportation Emergency Center--services

(NNI)

0312540 EIM8508-044220

EMERGENCY PROCEDURES IN THE CASE OF ACCIDENT IN THE CHEMICAL INDUSTRY AND STORAGE FACILITIES IN THE PORT AREA OF ANTWERP.

Clement, J.

Cent for the Prevention of Air & Water Pollution, Public Health Service, Antwerp, Belg

Conference Title: MariChem83, Conference on the Marine Transportation, Handling and Storage of Bulk Chemicals.

Conference Location: Hamburg, West Ger Conference Date: 1983 Oct 18-20

Source: MariChem 83. Publ by Gastech Ltd, Rickmansworth, Engl p 124-127 1984

CODEN: MARID8 ISSN: 0264-2697 ISBN: 0-904-930-25-

E.I. Conference No.: 05667

Language: English

In the early 60s a beginning was made with the industrialisation of the port area of Antwerp. Refineries, petrochemical and chemical industries were put up one after the other. With the increasing number of dangerous products stored or processed in these plants, the risk of a serious accident or even a calamity, increased seriously. This prompted the municipal authorities to take measures in order to prevent accidents and if necessary to fight them efficiently.

Descriptors: *PORTS AND HARBORS--*Accident Prevention; CHEMICAL INDUSTRY --Accident Prevention
Identifiers: EMERGENCY PROCEDURES; HAZARDS; REGULATIONS
Classification Codes: 407 (Maritime & Port Structures); 914 (Safety Engineering) 40 (CIVIL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0179353 85-024052
ESTIMATING EXPOSURE FROM A CHEMICAL SPILLED INTO A RIVER,
NEELY W. B. ; LUTZ R. W.
(DOW CHEMICAL CO, MI) AND,; (DOW CHEMICAL CO, ALBERTA),
* J HAZARDOUS MATERIALS, FEB 85, V10, N1, P33(9)
(ENV)

******** SEE SECTION I-B FOR MORE DETAIL ********

0170246 84-002179
GASTECH LTD MARICHEM 82 SYM PROCEEDINGS, AMSTERDAM, JUNE 22-24, 1982 ,
JENS, J. L. ; MORRISSETTE M.; BERKEL T. G.; GERRITSEN L. J.; KRUL J.; DOHRN J.; HOJER J.
IMCO, LONDON,
GASTECH (UK) REPORT, 1983, (216)

CONF PROCEEDINGS THE PROCEEDINGS OF THE MARICHEM CONF. ON THE MARINE TRANSPORTATION, HANDLING, & STORAGE OF BULK CHEMICALS, HELD IN AMSTERDAM DURING JUNE 22-24, 1982, ARE PRESENTED. MAJOR ASPECTS OF THE SAFE AND EFFECTIVE TRANSPORT OF CHEMCIAL SUBSTANCES WERE ADDRESSED. IMCO CRITERIA FOR HAZARD EVALUATION AND TRANSPORTATION SAFETY ARE REVIEWED. OTHER TOPICS COVERED INCLUDE: CONSIDERATIONS FOR BLANKET IMPOSITION FOR INERT GAS TRANSPORT, PROBLEMS FROM CONTAMINATION OF LPG CARGOES WITH AMMONIA, CHEMICAL TANKER SAFETY TRAINING, RESPONSE MEASURES FOR CHEMICAL SPILLS, AND CHEMICAL TANKER AND STORAGE CONTAINER DESIGNS. (NUMEROUS DIAGRAMS, PHOTOS, REFERENCES, TABLES)

DESCRIPTORS: *CHEMICAL TRANSPORT ; *CHEMICAL STORAGE ; *CHEMICAL STANDARDS ; *TRANSPORTATION SAFETY ; *TANKER DESIGN ; *CHEMICAL SPILLS ; AMMONIA ; LIQUEFIED PETROLEUM GAS ; CORROSION CONTROL
REVIEW CLASSIFICATION: 02
(ENV)

0163371 *83-002175
HANDLING OF RAIL CHEMICAL SPILL PRAISED,
RAWLS REBECCA L.
* CHEMICAL & ENGINEERING NEWS, NOV 1, 82, V60, N44, P28 (3)

FEATURE ARTICLE ON SEPTEMBER 28, 1982 A 101-CAR ILLINOIS CENTRAL GULF FREIGHT CAR DERAILED AND SPILLED HAZARDOUS CHEMICALS ALONG THE MAIN ROAD OF LIVINGSTON, LA. A BREAK IN THE PIN THAT SECURES THE WHEELS WAS BLAMED FOR THE ACCIDENT. THE HANDLING OF THE ACCIDENT HAS BEEN PRAISED BY THE RAIL AND CHEMICAL INDUSTRIES. THE USE OF SAFETY DEVICES, INSULATION, AND GENERAL PREPARATION BY AUTHORITIES RESULTED IN NO DEATHS OR INJURIES. TWO CARS DID EXPLODE, BUT NOT BEFORE AREA RESIDENTS HAD BEEN EVACUATED AND FIREFIGHTERS WERE PREPARED. (3 GRAPHS, 2 PHOTOS)

DESCRIPTORS: *CHEMICAL SPILLS ; *CHEMICAL CONTAM CONTROL ; *TRANSPORTATION ACCIDENTS ; *FIRE CONTROL ; *RAILROAD TANK CARS ; *HAZARDOUS WASTE TRANSPORT ; FLAMMABILITY ; EXPLOSIONS
REVIEW CLASSIFICATION: 02
(ENV)

0137883 *79-005095
HAZARDOUS MATERIALS ACCIDENT REPORTING,
HSE COMM GOVT OPERATIONS HEARINGS 95 CON 2, APR 25, 78 (404)
(ENV)

******* SEE SECTION II-E-3 FOR MORE DETAIL *******

0169300 84-001233
HAZARDOUS MATERIALS CONTAINMENT VIA SPILL PREVENTION AND FAILSAFE ENGINEERING ,
GOODIER J. LESLIE ; CECE JOHN M.
(PRESEARCH INC, VA) AND,; (DOE)
* J HAZARDOUS MATERIALS, 1983, V7, P145 (18)
(ENV)

****** SEE SECTION II-A FOR MORE DETAIL ******

1189694 PB86-865268/XAB
Hazardous Materials Transportation. 1977-April 1986 (Citations from the NTIS Database)
(Rept. for 1977-Apr 86)
National Technical Information Service, Springfield, VA.
Corp. Source Codes: 055665000
May 86 293p
Supersedes PB85-858744.
Languages: English Document Type: Bibliography
NTIS Prices: PC N01/MF N01 Journal Announcement: GRAI8613
Country of Publication: United States

This bibliography contains citations concerning the transport of hazardous materials primarily by road, rail, and cargo vessel. Risk assessment, accident analyses, response programs, and explosives container design aspects are among the topics discussed. Federal legislative aspects and state programs, and test procedures for a variety of containers are also considered. Selected fossil fuels, explosives, and hazardous chemicals are among the materials presented. Citations pertaining specifically to radioactive materials are excluded. (This updated bibliography contains 327 citations, 90 of which are new entries to the previous edition.)

Descriptors: *Bibliographies; *Cargo transportation; *Hazardous materials ; Rail transportation; Highway transportaion; Marine transportation; Transportation; Liquefied petroleum gases; Fuels; Containers
Identifiers: *Hazardous materials transportation; Oil spills; Chemical spills; Accident analysis; Risk assessment; Hazardous materials spills; NTISNTISN; NTISNERACD

Section Headings: 13L (Mechanical, Industrial, Civil, and Marine Engineering--Safety Equipment); 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 85D* (Transportation--Transportation Safety); 68GE* (Environmental Pollution and Control--General); 85GE (Transportation--General); 97K (Energy--Fuels); 43G (Problem Solving Information for State and Local Governments --Transportation); 88E (Library and Information Sciences-- Reference Materials)

(NTIS)

1123479 PB85-858744/XAB

Hazardous Materials Transportation. 1977-May 1985 (Citations from the NTIS Data Base)

(Rept. for 1977-May 85)

National Technical Information Service, Springfield, VA.

Corp. Source Codes: 055665000

May 85 218p

Supersedes PB83-804260.

Languages: English Document Type: Bibliography

NTIS Prices: PC N01/MF N01 Journal Announcement: GRAI8513

Country of Publication: United States

This bibliography contains citations concerning the transport of hazardous materials primarily by road, rail, or cargo vessel. Risk assessment, accident analyses, response programs, and explosives container design aspects are among the topics discussed. Federal legislative aspects and state programs, and test procedures for a variety of containers are also considered. Selected fossil fuels, explosives, and hazardous chemicals are among the materials presented. Citations pertaining specifically to radioactive materials are excluded. (This updated bibliography contains 237 citations, 36 of which are new entries to the previous edition.)

Descriptors: *Bibliographies; *Cargo transportation; *Hazardous materials : Rail transportation; Highway transportaion; Marine transportation; Transportation; Liquefied petroleum gases; Fuels

Identifiers: *Hazardous materials transportation; Oil spills; Accident analysis; Risk assessment; Chemical spills; NTISNTISN; NTISNERACD

Section Headings: 13L (Mechanical, Industrial, Civil, and Marine Engineering--Safety Equipment); 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 85D* (Transportation--Transportation Safety); 68GE* (Environmental Pollution and Control--General); 85GE (Transportation--General); 97K (Energy--Fuels); 43G (Problem Solving Information for State and Local Governments--Transportation); 88E (Library and Information Sciences--Reference Materials)

(NTIS)

AN CA104(12):94492c
TI **ICARIS (AAR's Industrial Chemical Accident Response Information System)**
AU Meier, G. E.
CS Assoc. Am. Railroads
LO Washington, DC, USA
SO Proc. Tech. Semin. Chem. Spills, 2nd, 172-83. Environ. Prot. Serv.: Ottawa, Ont.
SC 59-2 (Air Pollution and Industrial Hygiene)
SX 19, 61
DT C
CO 54GDAU
PY 1985
LA Eng
(CAS)

****** SEE SECTION III-A FOR MORE DETAIL ******

0173170 *84-005079
IDENTIFICATION OF HAZARDOUS MATERIAL COMBUSTION PRODUCTS: PROTOCOL DEVELOPMENT,
DELUMNYEA, R. ; MEIER G.E.; MOORE KATHY P.
CLEMSON UNIV,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 5-27, 83, P35 (16)

CONF PAPER RESEARCH WAS PERFORMED TO DEVELOP EVALUATION METHODOLOGIES APPLICABLE TO PARTICULATES EMITTED FROM RAILROAD TANK CAR FIRES. THE FIRST PHASE INVOLVED FABRICATION OF A FURNACE AND ANALYTICAL PROTOCOL FOR DETERMINING COMBUSTION PRODUCTS FOR SEVERAL COMMONLY TRANSPORTED

COMMODITIES UNDER CONDITIONS OF VARYING OXYGEN AVAILABILITY. COMBUSTION OF MODEL COMPOUNDS UNDER CONTROLLED CONDITIONS COMPRISED THE SECOND PHASE. ANALYTICAL EQUIPMENT AND PROCEDURES ARE DETAILED. (2 DIAGRAMS, 3 REFERENCES, 1 TABLE)

DESCRIPTORS: *CHEMICAL SPILLS ; *FIRES ; *PARTICULATES ; *AIR CHEMISTRY *VOLATILITY ; *VAPORIZATION ; TRANSPORTATION ACCIDENTS
REVIEW CLASSIFICATION: 02
(ENV)

0179811 *85-026195
INSPECTION REPORT: UNION CARBIDE, INSTITUTE, WV,
EPA REPORT, 1985 (140)

FED GOVT REPORT AN EPA INSPECTION OF THE UNION CARBIDE PLANT IN INSTITUTE, WV, WAS UNDERTAKEN TO DETERMINE IF THE CHEMICAL PLANT WAS IN COMPLIANCE WITH FEDERAL ENVIRONMENTAL LAWS. WITH THE EXCEPTION OF SOME ON-GOING INVESTIGATIONS INTO SOME RELEASES AND SPILLS, ONLY MINOR VIOLATIONS WERE FOUND. THESE VIOLATIONS RELATED PRIMARILY TO STORAGE OF SOME HAZARDOUS WASTE AT THE PLANT IN EXCESS OF THE 90 DAY PERIOD WHICH RESOURCE CONSERVATION & RECOVERY ACT OF 1976 REGULATIONS ALLOW FOR STORAGE WITHOUT A PERMIT. SMALL QUANTITIES OF METHYL ISOCYANATE WERE TREATED IN THE FACILITY WITHOUT A PERMIT.

DESCRIPTORS: *UNION CARBIDE CO ; *CHEMICAL SPILLS ; *CHEMICAL STORAGE ; *LAW ENFORCEMENT, ENV-FED ; *HAZARDOUS WASTE STORAGE ; *WEST VIRGINIA ; *STACK EMISSIONS ; *WASTEWATER OUTFALLS ; CHEM POLL CONT FINANCING ; RESOURCE CONSERV RECOVERY ACT 76 ; CLEAN AIR ACT 77 ; FED WATER POLL CONT ACT 77
REVIEW CLASSIFICATION: 02
(ENV)

78-04986
Liquid-transportation technology.
Kiley, L. R.; Scheffer, H.
Dow Chemical U.S.A., Distribution Technical Services, Midland, MI 48640
* CHEMICAL ENGINEERING 85(8), 17-23, Coden: CHEEA3
Publ.Yr: Apr. 3, 1978
illus. no refs.
Sum.
Languages: ENGLISH
Doc Type: JOURNAL PAPER

Liquid-transportation technology is based on the properties of the liquid, which must be thoroughly understood in order to make transportation judgements. Measurements of reactivity, flammability, and toxicity form the key database for good management decisions. Many types of containers are available for packaging liquids for transportation; the shipper must relate the package to the transportation mode, taking into account normal transportation, effects of accidental spillage, package handling, and warehousing logistics. Highway, rail, marine, and air transport modes are discussed. Air transportation requires special concern for safety. Chemical shippers must give assurance that air safety is not reduced by the characteristics of the material or packaging offered for shipment. The ultimate demand of transportation on the shipper is his role as steward of the product. He can best assess safety and environmental impact. He can ensure that steps are taken to protect persons, property, and environment while his products are handled, stored, and transported. He is in the strongest position to guide carriers, warehouses, and terminals. Only the shipper can direct, train, and motivate his personnel. (FT)

Descriptors: Transportation; Toxic materials; Chemicals; Hazardous materials; Public health; Government regulations; Technology

(POL)

083831 W75-05870

A MODAL ECONOMIC AND SAFETY ANALYSIS OF THE TRANSPORTATION OF HAZARDOUS SUBSTANCES IN BULK, FINAL REPORT (REVISED)

LITTLE (ARTHUR D.), INC., CAMBRIDGE, MASS.

AVAILABLE FROM THE NATIONAL TECHNICAL INFORMATION SERVICE, SPRINGFIELD, VA 22161 AS COM-74-11271, $8.50 IN PAPER COPY, $2.25 IN MICROFICHE. MARITIME ADMINISTRATION REPORT MA-GEN-740-75006, MAY 1974. 266 P, 3 FIG, 47 TAB, 11 REF, 6 APPEND. C-76446.,

Journal Announcement: SWRA0812

TEN HAZARDOUS SUBSTANCES WERE CHOSEN TO SHOW THE VARIED NATURE OF SHIPPING HAZARDS IN INLAND WATERWAYS AND THE COST/RISK TRADEOFFS THAT WOULD OCCUR IN TRANSPORT BY ALTERNATIVE TRANSPORTATION MODES. THE RISKS INVOLVED OF SHIPPING EACH SUBSTANCE WERE QUANTIFIED UTILIZING (1) THE EXPECTED FREQUENCY AND QUANTITY OF ACCIDENTAL RELEASES FOR EACH TRANSPORTATION MODE BASED ON HISTORICAL DATA, (2) THE HAZARD DUE TO THE RELEASE BASED ON PHYSICAL INTERACTIONS THAT TAKE PLACE ON LAND OR WATER, (3) RISKS TO PEOPLE, PROPERTY AND THE ENVIRONMENT ARE EVALUATED FROM THE HAZARD ASSESSMENT AND KNOWLEDGE OF THE VULNERABLE RESOURCES IN THE VICINITY OF THE RELEASE. FOR THE CARGO FLOWS IN QUESTION, THE COST OF BARGE TRANSPORTATION

IS CONSIDERABLY BELOW THAT OF RAIL OR TRUCK. WITH THE EXCEPTION OF CHLORINE AND BENZENE, THE ANNUAL EXPECTED EXPOSURE ASSOCIATED WITH THE TRANSPORT OF THESE SUBSTANCES IS LOWEST FOR BARGES. THE TRUCK MODE IS EQUALLY SAFE, AND BOTH BARGE AND TRUCK ARE SUBSTANTIALLY SAFER THAN RAIL. THE FUTURE OF TRANSPORTING HAZARDOUS SUBSTANCES BY BARGE SEEMS TO HINGE NOT ONLY ON THE EXACT NATURE OF THE PENALTY SYSTEM TO BE IMPOSED BY THE EPA, BUT ALSO ON WHETHER IT IS POSSIBLE FOR CARRIERS/SHIPPERS TO BUY INSURANCE AGAINST CIVIL PENALTIES. (AUEN-WISCONSIN)

Descriptors: *TRANSPORTATION ; *HAZARDS ; *CHEMICALS ; *COMPARATIVE COSTS ; RISKS ; SAFETY ; INLAND WATERWAYS ; RAILROADS ; BARGES ; PIPELINES ; HIGHWAYS ; WATER POLLUTION SOURCES ; FEDERAL WATER POLLUTION CONTROL ACT ; FREQUENCY ANALYSIS ; ENVIRONMENTAL EFFECTS ; REGULATION

Section Heading Codes: 6B (Water Resources Planning--Evaluation Process) ; 5B (Water Quality Management and Protection--Sources of Pollution)

(WAT)

0173171 *84-005080

NEW TECHNIQUES IN CHEMICAL SPILL CONTROL,

BANNISTER, WILLIAM W. ; DOUGLAS CRAIG D.; CURBY WILLIAM A.; NDI KINGSLEY B.; KAN DAVID L.; WALSH STEVEN P.; DALTON WILLIAM J.

UNIV OF LOWELL,

ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P75 (18)

(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0169356 *84-001289

RISK ASSESSMENT FOR THE TRANSPORT OF HAZARDOUS MATERIALS ,

DOOLEY, J. ; BURTON I.

UNIV OF TORONTO, CANADA

ROYAL SOCIETY OF CANADA/ET AL RISK ASSESSMENT & PERCEPTION SYM, TORONTO, OCT 18-19, 82, P81 (9)

(ENV)

****** SEE SECTION I-D FOR MORE DETAIL ******

0175598 85-003391
RISKS OF CATASTROPHIC DERAILMENTS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS,
GLICKMAN THEODORE S. ; ROSENFIELD DONALD B.
(VIRGINIA POLYTECHNIC INST & STATE UNIV) AND; (ARTHUR D. LITTLE INC. MA),
* MANAGEMENT SCIENCE, APR 84, V30, N4, P503(10)
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

0385654 EIM8605-032259
SAFETY OF HYDROGEN AS A GROUND TRANSPORTATION FUEL.
Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Cryogenic Processes and Equipment - 1984. (Presented at The Fifth Intersociety Cryogenics Symposium, The Winter Annual Meeting of The American Society of Mechanical Engineers.)
Conference Location: New Orleans, LA, USA Conference Date: 1984 Dec 9-14
Sponsor: ASME, Cryogenic Committee, New York, NY, USA; ASME, Cryogenic Heat Transfer Committee, New York, NY, USA; AIChE, Cryogenic Committee, New York, NY, USA; Int Inst of Refrigeration, Paris, Fr
Source: Publ by ASME, New York, NY, USA p 123-129 1984
E.I. Conference No.: 05854
Language: English
(EEM)

****** SEE SECTION I-A FOR MORE DETAIL ******

0324556 EIM8509-056236
SAFETY OF NATURAL GAS RETAIL STORAGE, REFUELING AND USE IN ROAD VEHICLES.
Hallett, Patrick H.; Heenan, J.
Transport Canada, Can
Conference Title: Proceedings of the Twenty-Second Automotive Technology Development Contractors' Coordination Meeting.
Conference Location: Dearborn, MI, USA Conference Date: 1984 Oct 29-Nov 2
Sponsor: DOE, Washington, DC, USA

Source: Proceedings - Society of Automotive Engineers P-155. Publ by SAE, Warrendale, PA, USA p 81-88 1985
CODEN: PSOED4 ISBN: 0-89883-716-2
E.I. Conference No.: 06858
Language: English
(EEM)

******** SEE SECTION I-A FOR MORE DETAIL ********

TITLE: Study of Detection Identification and Quantification Techniques for Spills of Hazardous Chemicals.
AUTHOR: Sandness, G. A., Washburn, J. F., Ailes, S. B.
SOURCE: Washington, Office of Research and Development, U.S. Coast Guard, Available from NTIS, 1976.
(LC)

******** THIS ENTRY ALSO APPEARS IN SECTION III-A ********

0180204 *85-029389
A SURVEY OF COUNTERMEASURES SYSTEMS FOR HAZARDOUS MATERIAL SPILLS,
SOLSBERG L. B.
HATFIELD CONSULTANTS LTD, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P391(4)
(ENV)

******** SEE SECTION III-B FOR MORE DETAIL ********

0131073 EIM8308-057928
TANK CONTAINER SAFETY: CONSIDERATIONS FOR A MORE RATIONAL APPROACH.
Gerhard, B.
Westerwaelder Eisenwerk Gerhard GmbH, Weitefeld, West Ger
Conference Title: Conference Papers - MariChem 82, 4th International Conference and Exhibition on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Amsterdam, Neth Conference Date: 1982 Jun 22-24

Source: MariChem 82. Publ by Gastech Ltd, Rickmansworth, Hertfordshire, Engl Sess 4, Pap 3, 15p 1982
CODEN: MARID8
E.I. Conference No.: 01857
Language: English

Descriptors: *CONTAINERS--*Accident Prevention
Identifiers: TOP LIFTING; HAZARDOUS CARGO TANKS; CRANES AND HANDLING METHODS; VALVE SETTING AND WORKING PRESSURES; STANDARDS AND REGULATIONS; INTERNATIONAL STANDARDS ORGANIZATION COMMITTEE IC 104; TRANSPORT RELATED TECHNOLOGY; PRESSURE AND SHELL THICKNESS; DISCHARGE OF TANK CONTAINERS; NATIONAL AND REGIONAL MODEL REGULATIONS
Classification Codes: 691 (Bulk Materials Handling); 914 (Safety Engineering) 69 (MATERIALS HANDLING); 91 (ENGINEERING MANAGEMENT)

(EEM)

C. CONTINGENCY PLANNING AND EXERCISE (SIMULATION):

TITLE: A Bibliographical Guide to Disaster Planning, Management, Insurance, and the Case of Bhopal, India.
AUTHOR: Coppa & Avery Consultants.
PUBLISHER: Monticello, Ill. : Vance Bibliographies.
DATE: 1985.
(LC)

1181543 PB86-155264/XAB
Chemical Emergency Preparedness Program: Chemical Profiles (Interim guidance)
Environmental Protection Agency, Washington, DC.
Corp. Source Codes: 031287000
Report No.: EPA/560/7-85/013
Dec 85 1435p
See also PB86-155256.
Languages: English
NTIS Prices: PC A99/MF E10 Journal Announcement: GRAI8610
Country of Publication: United States

The document, developed by the U.S. Environmental Protection Agency (USEPA) is part of the USEPA National Air Toxics Strategy. The document is provided in support of EPA Chemical Emergency Preparedness Program (CEPP) which deals with accidental release of acutely toxic chemicals. For each acutely toxic chemical listed in the CEPP guidance document (report number PB86-155256), a chemical profile is available. A chemical profile is a collection of information on the chemical identity hazardous identity, physical/chemical characteristics, fire and explosive hazard, reactivity, health hazard, use, and precautions for handling and use of the chemical. The information is presented in the format that conforms as closely as possible to the Occupational Safety and Health Administration (OSHA) recommended format for a Material Safety Data Sheet (MSDS).

Descriptors: *Chemical compounds; *Toxicity; *Air pollution; *Management planning; *Hazardous materials; Sites; State government; Accidents; Tables(Data); Safety; Chemical properties; Physical properties; Chemical analysis; Fire safety
Identifiers: *National air toxics strategy; *Toxic substances; Environmental Protection Agency; Listings; Occupational safety and health; NTISEPAOTS
Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 6T (Biological and Medical Sciences--Toxicology); 6J (Biological

and Medical Sciences--Industrial (Occupational) Medicine); 13L (Mechanical, Industrial, Civil, and Marine Engineering--Safety Equipment); 68A (Environmental Pollution and Control--Air Pollution and Control); 43F (Problem Solving Information for State and Local Governments--Environment); 91A (Urban and Regional Technology and Development--Environmental Management and Planning); 57Y (Medicine and Biology--Toxicology); 68G (Environmental Pollution and Control--Environmental Health and Safety); 57U (Medicine and Biology--Public Health and Industrial Medicine)

(NTIS)

1181542 PB86-155256/XAB

Chemical Emergency Preparedness Program: Organizing the Community, Gathering Site-Specific Information, Contingency Plan Development, Contingency Plan Appraisal, The Criteria, Appendices (Interim guidance)

Environmental Protection Agency, Washington, DC.
Corp. Source Codes: 031287000
Report No.: EPA/560/7-85/012
Nov 85 171p
See also PB86-155264.
Languages: English
NTIS Prices: PC A08/MF A01 Journal Announcement: GRAI8610
Country of Publication: United States

The document, developed by the U.S. Environmental Protection Agency (USEPA) is part of the USEPA National Air Toxics Strategy. The purpose of the document is to provide the public and state and local officials with information to assist them in planning how to respond to accidental releases of acutely toxic chemicals. It provides recommendations on how communities get organized, gather relavent information, and develop, evaluate and update contingency plans. It also describes the criteria used by the EPA to classify chemicals as acutely toxic and provides a list of 402 chemicals that meet these criteria.

Descriptors: *Chemical compounds; *Toxicity; *Air pollution; *Management planning; *Hazardous materials; Sites; State government
Identifiers: *National air toxics strategy; *Toxic substances; Environmental Protection Agency; Listings; NTISEPAOTS

Section Headings: 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 6T (Biological and Medical Sciences--Toxicology); 68A (Environmental Pollution and Control--Air Pollution and Control); 43F (Problem Solving Information for State and Local Governments--Environment); 91A (Urban and Regional Technology and Development--Environmental Management and Planning); 57Y (Medicine and Biology--Toxicology)

(NTIS)

1290528

Chemical releases: EPA issues emergency response plan.EPA has launched its Chemical Emergency Preparedness Plan to help state and local govts respond to routine emissions of toxic chemicals into the air and accidental releases.

* Chemical & Engineering News December 23, 1985 p. 3

Although the plan is voluntary, Environmental Protection Agency believes that it provides enough incentives to prevent accidents. Environmental Protection Agency has developed a list of over 400 chemicals so toxic that they would cause immediate acute health problems in the case of an accidental release and has established specific toxicity criteria. If a chemical's median lethal dose is less than or equal to 50 milligram/kg of body weight by skin contact or 25 milligram/kg if swallowed, or if the median lethal concentration in air is less than or equal to 0.5 milligram/L, the chemical is included on the list of acutely toxic chemicals. By applying the criteria to NIOSH's Registry of Toxic Effects of Chemical Substances, Environmental Protection Agency developed a list of 379 chemicals, including solvents, intermediates, pesticides, inroganics, liquids, gases and solids. Explosive, flammable, reactive or corrosive chemicals were excluded from the list because it focuses on acute health hazards. At least 141 chemicals listed are no longer made or imported into the US.

*1USA *United States *2800000 *Chemicals & Allied Products *97 *govt functions

(PRO)

0159180 *82-004864
A COMMUNITY MODEL FOR HANDLING HAZARDOUS MATERIALS AND TRANSPORTATION EMERGENCIES
RUSSELL, E. R.; SMALTZ J. J.; LAMBERT J. P.;
DEINES V. P.; JEPSEN R. L.
KANSAS STATE UNIV,
NTIS REPORT PB82-131640, OCT 81 (538)

SPECIAL REPORT: MODELS THAT CAN BE USED FOR HANDLING HAZARDOUS MATERIALS TRANSPORTATION EMERGENCIES WERE DEVISED FOR USE BY LOCAL COMMUNITIES. THE MODELS WERE USED ON TWO TEST COMMUNITIES. THE MODELS WERE EASY TO APPLY AND PROVIDE REASONABLE RESULTS.

DESCRIPTORS: *EMERGENCY PLANNING ; *HAZARDOUS WASTE TRANSPORT ;
*CHEMICAL SPILLS ; *POLICY-PLANNING, STATE LOCAL
REVIEW CLASSIFICATION: 02
(ENV)

573685 W86-03358
Contingency Planning for Chemical Accidents
Gilad, A.; Waddington, J. I.
World Health Organization, Copenhagen (Denmark). Regional Office for Europe.
IN: Environmental Protection: Standards, Compliance and Costs, Ellis Horwood, Ltd, Chichester, England, 1984. 219-233 p, 5 fig.,
Journal Announcement: SWRA1908

Toxic and potentially toxic chemicals are now a part of the daily life of most people in the world. Because of the ever-increasing volume of chemicals being manufactured, transported, stored and disposed of as wastes, it is inevitable that accidental spills will happen with increased frequency. The purpose of this paper is to described contingency planning for chemical accidents. First, the response approach should be based on the magnitude of the accident. Levels are categorized from the operator level to the international level. Second, the authors provide suggestions for a systematic approach to the establishment of emergency response systems. The structure and elements of response systems should include an alert system, means of evaluation of the situation and the classification to the accident, and the provision for the flow of information to appropriate groups, including outside help. Finally, the need for protection, and, if necessary, the rehabilitation, of water resources is discussed. (Halterman-PTT)

Descriptors: *Aquatic environment ; *Environmental protection ; *Accidents; Monitoring ; Chemical wastes ; Oil spills ; Contingency planning
Section Heading Codes: 5G (Water Quality Management and Protection—Water Quality Control); 5C (Water Quality Management and Protection—Effects of Pollution)
(WAT)

TITLE: **Contingency Planning for Chemical Spills.**
AUTHOR: Kozel, Ronald M.
SOURCE: Small Town, Vol. 14, Jan.-Feb. 1984: 25-27.
NOTES: Describes the elements a community should consider when it develops a contingency plan for chemical spills. The author is an environmental specialist in emergency response.
(LC)

0157667 *82-003447
EMERGENCY RESPONSE IN THE U.S. CHEMICAL INDUSTRY,
NORTON J. H.
E.I. DU PONT DE NEMOURS,
PRESENTED AT IAEA CURRENT NUCLEAR POWER PLANT SAFETY ISSUES INTL CONF, STOCKHOLM, OCT 20-24, 80, V1, P343 (10)

TECHNICAL FEATURE THE GROWING PUBLIC CONCERN OVER THE SAFE DISTRIBUTION OF HAZARDOUS CHEMICALS AND THE GOAL OF GOVERNMENT AND INDUSTRY TO ADDRESS THAT CONCERN ARE SURVEYED. THE PITFALLS ENCOUNTERED BY THE PUBLIC AND PRIVATE SECTORS INCLUDE: INADEQUATELY DEFINING THE PROBLEM; TRYING TO ASSESS BLAME RATHER THAN SEEKING SOLUTIONS; AND FAILING TO INVOLVE ALL AFFECTED PARTIES TO ARRIVE AT SOLUTIONS. THE CURRENT ORGANIZATION AND WORKING RELATIONSHIPS WITHIN THE U.S. FOR RESPONDING TO CHEMICAL TRANSPORTATION INCIDENTS ARE EXPLAINED.

DESCRIPTORS: *CHEMICAL SPILLS ; *EMERGENCY PLANNING ; *TRANSPORTATION ACCIDENTS ; *CHEMICAL TRANSPORT ; IAEA CONF PAPER
REVIEW CLASSIFICATION: 02
(ENV)

0161899 *83-000754

THE HAZARDOUS MATERIAL SPILL PROGRAM OF THE ENVIRONMENTAL EMERGENCY BRANCH,

FINGAS, MERVIN F. ; THORNTON DAVID E.
ENV CANADA ENV PROTECTION SERVICE, OTTAWA,
SPILL TECHNOLOGY NEWSLETTER, MAR-APR 82, V7, N2, P48 (13)

TECHNICAL FEATURE CURRENT ACTIVITIES OF THE CHEMICAL HAZARD EMERGENCY COUNTERMEASURES PROGRAM OF THE ENVIRONMENT CANADA ENVIRONMENTAL EMERGENCY BRANCH ARE REPORTED. THE PROGRAM USES NATIONAL CHEMICAL SPILL DATA BASES FOR SETTING PRIORITIES AND TO PROVIDE INFORMATION ON THE LOCATION OF SPILL CLEANUP EQUIPMENT. A PRIORITY LIST OF SPILLED CHEMICALS HAS BEEN DEVISED, AS WELL AS PREVENTION AND CONTINGENCY PLANNING PROCEDURES. HAZARD-LEVEL MONITORING ACTIVITIES AND IMPROVED COUNTERMEASURES ARE DISCUSSED. (1 GRAPH, 11 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *CANADA ; *INFORMATION SYSTEMS, ENV ; *MONITORING, ENV-CHEMICAL ; *POLLUTION CONTROL EQUIPMENT ; INSTRUCTION MANUALS
REVIEW CLASSIFICATION: 02
(ENV)

0172171 *84-004080

HAZARDOUS MATERIALS MANAGEMENT: A LOCAL APPROACH,

ROBERTS, RICHARD L. ; GEBB, J. WESLEY
SAN BERNARDINO COUNTY DEPT ENV HEALTH SERVICES, CA
* J ENV HEALTH, JAN-FEB 84, V46, N4, P176 (4)

JOURNAL ARTICLE THE GENESIS OF A SUCCESSFUL LOCAL HAZARDOUS MATERIALS MANAGEMENT PROGRAM IN SAN BERNARDINO COUNTY, CA, IS PROFILED. AN EMERGENCY RESPONSE PLAN WAS PREPARED BY THE COUNTY'S DEPT. OF ENVIRONMENTAL HEALTH SERVICES, DESIGNED TO PROVIDE IMMEDIATE RESPONSE TO REPORTS OF SPILLED OR ILLICITLY DUMPED HAZARDOUS MATERIALS. A LOCALLY-BASED RESPONSE TEAM IS ON 24-HOUR STANDBY FOR THE CONTAINMENT AND CLEANUP OF HAZARDOUS WASTE SPILLS. OTHER ASPECTS OF THE LOCAL MANAGEMENT PROGRAM ADDRESS COMMUNICATIONS SYSTEMS, PERSONN AND ENFORCEMENT OF STATE AND LOCAL CLEANUP REGULATIONS. (7 REFERENCES, 1 TABLE) (ENV)

0177052 *85-010130
HAZARDOUS MATERIALS RESPONSE GUIDE,
ILLINOIS ENV PROTECTION AGENCY REPORT, 1984 (49)

STATE/LOCAL GOVT REPORT INFORMATION IS COMPILED TO PROVIDE RAPID ACCESS TO DATA ON HAZARDOUS PROPERTIES OF CHEMICALS INVOLVED IN EMERGENCY INCIDENTS. TOXICITY, FLAMMABILITY, AND EXPLOSION RATINGS ARE LISTED FOR HUNDREDS OF CHEMICALS. A PRACTICAL APPROACH TO CALCULATING EVACUATION DISTANCES IS OUTLINED. (4 GRAPHS, 3 TABLES,)

DESCRIPTORS: *CHEMICAL SPILLS ; *DATA, ENV-CHEMICAL ; *FLAMMABILITY ; *ATMOSPHERIC DIFFUSION ; EXPLOSIONS ; VAPORS, TOXIC
REVIEW CLASSIFICATION: 02
(ENV)

0992929 PB83-213025
Health Aspects of Chemical Safety. Planning Emergency Response Systems for Chemical Accidents. Interim Document 1. Emergency Response to Chemical Accidents
Jones, P. H. ; Gilad, A. ; Chrst, R. ; Liverman, D. ; Mitran, E.
World Health Organization, Copenhagen (Denmark). Regional Office for Europe.
Corp. Source Codes: 032694002
Sponsor: United Nations Development Programme.
1981 262p
See also report number 4, PB83-213058. Sponsored in part by United Nations Development Programme.
Languages: English
NTIS Prices: PC A12/MF A01 Journal Announcement: GRAI8319
(NTIS)

****** SEE SECTION IV-B FOR MORE DETAIL ******

0296247 EIM8505-027927
INTERACTIVE HAZARDOUS CHEMICAL SPILL SIMULATION.
Parnarouskis, Michael; Potts, Richard G.
US Coast Guard Headquarters, Washington, DC, USA
Conference Title: Computer Simulation in Emergency Planning, Proceedings of the Conference.
Conference Location: San Diego, CA, USA Conference Date: 1983 Jan 27-29
Sponsor: Soc for Computer Simulation, La Jolla, CA, USA

Source: Simulation Series v 11 n 2 1983. Publ by Soc for Computer Simulation, La Jolla, CA, USA p 95-102 1983
CODEN: SISEDL
E.I. Conference No.: 05295
Language: English

The Hazard Assessment Computer System (HACS) is one of six major components of the Coast Guard's Chemical Hazards Response Information System (CHRIS). CHRIS is designed primarly to provide timely information essential for proper decision-making by responsible Coast Guard personnel and others during emergencies involving the water transport of hazardous chemicals. It also provides other basic information to support the Coast Guard in its efforts to improve levels of safety in the bulk shipment of hazardous chemicals. CHRIS consists of four reference guides or manuals, a regional contingency plan, a hazard-assessment computer system (HACS), and an organizational entity located at Coast Guard Headquarters. The four manuals contain chemical data, hazard-assessment methods, and response guides. 6 refs.

Descriptors: *CHEMICALS—*Safe Handling; WATER POLLUTION; COMPUTER SIMULATION; ENVIRONMENTAL IMPACT
Identifiers: HAZARDS ASSESSMENT COMPUTER SYSTEM; CHEMICAL HAZARDS RESPONSE INFORMATION SYSTEM; COAST GUARD
Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products); 453 (Water Pollution); 723 (Computer Software); 901 (Engineering Profession); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 45 (POLLUTION & SANITARY ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 90 (GENERAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(EEM)

0008769 EIM8207-015019

MAJOR INCIDENT CRITERIA.

Lowe, David
Imp Chem Ind Ltd, Engl

Conference Title: Opportunities and Constraints: Proceedings of the 1980 Eurochem Conference. (EFCE Event no 239 (European Federation of Chemical Engineering)
Conference Location: Birmingham, Engl Conference Date: 1980 Jun 24-26

Source: EFCE Publication Series (European Federation of Chemical Engineering) n 14, Publ by Inst of Chem Eng, Rugby, Warwickshire, Engl p 5:1. 1-5:1. 28 1980
E.I. Conference No.: 00214
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0126578 78-001646
MANAGEMENT OF TOXIC CHEMICAL SPILLS,
CROKE KEVIN G. ; RAUFER ROGER K.
(UNIV OF ILLINOIS MEDICAL CENTER), AND; (ETA ENGINEERING, ILL),
* APCA J, JAN 78, V28, N1, P57 (4)

SURVEY REPORT MANAGEMENT PROGRAMS ARE NEEDED TO CONTROL CHEMICAL SPILL EPISODES. ILLINOIS HAS PASSED A REGULATION REQUIRING THAT FIRMS PREPARE EMERGENCY PLANS FOR SUCH INCIDENTS. CHEMICALS THAT SHOULD BE REGULATED, PREPARATION OF FIRMS TO HANDLE ACCIDENTAL RELEASES, CHEMICALS THAT ARE IN GREATEST USE IN ILLINOIS, MAJOR INDUSTRIAL USERS OF TOXIC SUBSTANCES, AND COSTS OF REGULATION ARE DISCUSSED. A SURVEY DEMONSTRATES THAT INDUSTRY IS NOT PREPARED TO DEAL EFFECTIVELY WITH ACCIDENTS INVOLVING CHEMICAL SPILLS. (2 GRAPHS, 3 TABLES)

DESCRIPTORS: *ILLINOIS ; *CHEMICAL SPILLS ; *EMERGENCY PLANNING ; *STATE LOCAL ENV AGENCIES ; *SURVEYS ; *STANDARD INDUSTRL CLASSIFCTN ; *ECON IMPACT-CHEM POLL CONT ; *REGULATIONS, ENV-STATE LOCAL ; CHEMICAL STANDARDS
REVIEW CLASSIFICATION: 02
(ENV)

1287677
Meanwhile, EPA has launched an Emergency Preparedness Program.EPA has begun an emergency preparedness program to help prevent toxic chemical accidents in the US.
* Chemical Engineering December 9, 1985 p. 12

It has published a list of over 400 acutely toxic chemicals, including detailed profiles on each substance. The voluntary program is designed to help communities decide whether the chemicals pose a threat and prepare contingency plans for responding to leaks.

*1USA *United States *2800000 *Chemicals & Allied Products *93 *regulation
(PRO)

0142905 80-002897
ORGANIZING TO COPE WITH HAZARDOUS MATERIAL SPILLS,
RYCKMAN, D. W. ; RYCKMAN MARK D.
RYCKMANS EMERGENCY ACTION & CONSULTING TEAM, ST LOUIS,
* AWWA J, APR 80, V72, N4, P196 (5)

SURVEY REPORT PRESENTED IS A MODEL THAT CAN BE USED BY WATER UTILITIES TO ESTABLISH AND EVALUATE EMERGENCY RESPONSE PLANS DESIGNED TO COPE WITH HAZARDOUS MATERIALS SPILLS. ESSENTIAL TO THE SUCCESS OF THE MODEL ARE: FAST RESPONSE TO THE EMERGENCY; AVAILABILITY OF EXPERIENCED TECHNICIANS TO MEET PROBLEMS; AN EFFECTIVE COMMUNICATIONS NETWORK; AND THE AVAILABILITY OF SPECIALIZED EQUIPMENT FOR TREATMENT, RECOVERY, AND DISPOSAL OF HAZARDOUS WASTES. APPLICATION OF THE MODEL IS DESCRIBED. (2 DIAGRAMS, 4 PHOTOS, 12 REFERENCES)

DESCRIPTORS: *CHEMICAL SPILLS ; *WATER, DRINKING ; *WATER RESOURCES PLANNING ; *OIL SPILLS ; EMERGENCY PLANNING
REVIEW CLASSIFICATION: 02
(ENV)

1183702 PB86-162260/XAB
Perception of Threat by a Noxious Gas Accident and the Reported Coping Style (Perception av Hotet fran Gasolyckan i Karlskoga och Rapporterad Handlingsstrategi)
Shalit, B.
Foersvarets Forskningsanstalt, Stockholm (Sweden).
Corp. Source Codes: 063330000
Report No.: FOA-C-50036-H3
Jan 86 43p
Summary in Swedish.
Languages: English
NTIS Prices: PC E03/MF E01 Journal Announcement: GRAI8611
(NTIS)

****** SEE SECTION II-D FOR MORE DETAIL ******

846719 C76000964
PREVENTING AND DEALING WITH IN-PLANT HAZARDOUS SPILLS
WIRTH, G.F.
DOW CHEMICAL USA, WESTERN DIV., PITTSBURGH, PA, USA
CHEM. ENG. (USA) VOL.82, NO.17 82-5, 87-96 18 AUG. 1975
CODEN: CHEEA3
Treatment: APPLIC; PRACTICAL
Document Type: JOURNAL PAPER
Languages: ENGLISH

(4 Refs)
SUGGESTS THAT CHEMICAL-SPILL-HANDLING PLANS SHOULD PROVIDE INFORMATION ON ALTERNATE ACTIONS, RESULTS AND RISKS IN RESPONDING TO CHEMICAL-SPILL SITUATIONS.

Descriptors: CHEMICAL INDUSTRY; SAFETY SYSTEMS
Identifiers: HAZARDOUS SPILLS; RISKS; CHEMICAL SPILL HANDLING PLANS
Class Codes: 2C7863; 2C7886
(INS2)

0179834 *85-026373
PUBLIC ACCESS TO HAZARD INFORMATION ABOUT CHEMICALS,
CHEMICAL MFR ASSN NEWSRELEASE, MAR 25, 85 (4)

NEWSRELEASE THE U.S CHEMICAL INDUSTRY HAS ANNOUNCED A SERIES OF INITIATIVES DESIGNED TO INCREASE PUBLIC ACCESS TO HAZARD INFORMATION ABOUT CHEMICALS. THE INITITIATIVE WILL ALSO IMPROVE EMERGENCY RESPONSE PLANNING AND TRAINING AT THE LOCAL LEVEL AND EXPAND THE INDUSTRY'S CAPABILITY TO PROVIDE DIRECT ASSISTANCE TO FIRE, POLICE, AND MEDICAL PERSONNEL RESPONDING TO CHEMICAL EMERGENCIES. EXPANSION OF THE CHEMICAL TRANSPORTATION EMERGENCY CENTER, THE INDUSTRY'S 14-YEAR OLD TRANSPORATION EMERGENCY HOTLINE SERVICE, IS ALSO PLANNED.

DESCRIPTORS: *INFORMATION, ENV ; *CHEMICAL USAGE ; *DATA REPORTING ; *PUBLIC RELATIONS ; *EMERGENCY PLANNING ; CHEMICAL SPILLS ; HEALTH SAFETY, OCCUPATIONAL
REVIEW CLASSIFICATION: 02
(ENV)

0174542 *84-006451
RESEARCH FINDINGS ON COMMUNITY AND ORGANIZATIONAL PREPARATIONS FOR AND RESPONSES TO ACUTE CHEMICAL EMERGENCIES,
GRAY, JANE ; QUARANTELLI E. L.
OHIO STATE UNIV DISASTER RESEARCH CENTER REPORT 91, 1984, (6)

ACADEMIC REPORT A FOUR YEAR STUDY OF COMMUNITY AND ORGANIZATIONAL PREPAREDNESS FOR AND RESPONSES TO ACTUAL AND POTENTIAL SUDDEN DISASTERS RESULTING FROM CHEMICAL AGENTS IS DISCUSSED. FIELD STUDIES IN 19 COMMUNITIES IN THE U.S. DEMONSTRATED THAT CHEMICAL DISASTER AGENTS TEND TO BE RELATIVELY MORE HETEROGENEOUS THAN OTHER KINDS OF DISASTER AGENTS. FINDINGS ABOUT THE SOCIOBEHAVIORAL ASPECTS OF DISASTER PREPAREDNESS FOR THE ORGANIZATIONAL AND COMMUNITY RESPONSES TO CHEMICAL DISASTERS ARE BRIEFLY SUMMARIZED.

DESCRIPTORS: *EMERGENCY PLANNING ; *CHEMICAL SPILLS ; *STATE LOCAL ENV AGENCIES
REVIEW CLASSIFICATION: 02
(ENV)

0169356 *84-001289
RISK ASSESSMENT FOR THE TRANSPORT OF HAZARDOUS MATERIALS ,
DOOLEY, J. ; BURTON I.
UNIV OF TORONTO, CANADA
ROYAL SOCIETY OF CANADA/ET AL RISK ASSESSMENT & PERCEPTION SYM, TORONTO, OCT 18-19, 82, P81 (9)
(ENV)

****** SEE SECTION I-D FOR MORE DETAIL ******

0171812 *84-003721
THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT PROGRAM TO CONTROL TOXIC AND HAZARDOUS AIR CONTAMINANTS,
CAMARENA EDWARD
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, CA,
CALIFORNIA AIR RESOURCES BOARD AIR POLLUTION ENFORCEMENT SYM, EL MONTE, CA, MAY 24-26, 83, PA-3 (31)

CONF PAPER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, CA, ADMINISTERS PROGRAMS TO ABATE EMISSIONS OF TOXIC AND HAZARDOUS AIR POLLUTANTS. THIS IS ACCOMPLISHED THROUGH ENFORCEMENT OF APPLICABLE STATE STATUTES AND NATIONAL EMISSION STANDARDS, AND THROUGH ASSISTANCE RENDERED TO OTHER AGENICES IN THE EVENT OF A SPILL OF SUBSTANCES WHICH MAY BECOME AIRBORNE. EMERGENCY PREPAREDNESS AND RESPONSE POLICIES HAVE BEEN DEVELOPED TO COMBAT TOXIC SPILLS. VINYL CHLORIDE EMISSION CONTROL ACTIVITIES CONCERNING INDUSTRIAL SOURCES, TOXIC DUMPS, AND LANDFILLS ARE SURVEYED. MONITORING AND MODELING PROGRAMS ARE ALSO CONSIDERED.

DESCRIPTORS: *AIR QUALITY PROGRAMS ; *CALIFORNIA ; *CHEMICAL RESIDUES ; *CHEMICAL SPILLS ; *HAZARDOUS WASTE DISPOSAL ; *LAW ENFORCEMENT, ENV-STE LOC ; *LANDFILL, SANITARY ; *STACK EMISSION CONTROL ; VINYL CHLORIDES ; ODORS ; INCINERATION
REVIEW CLASSIFICATION: 02
(ENV)

0179352 85-024050

STATE AND NATIONAL RESOURCES FOR COMMUNITY SPILL DISASTER PREPAREDNESS IN THE UNITED STATES,

FROEBE LARRY R.

ECOLOGY & ENV INC, TX,

* J HAZARDOUS MATERIALS, FEB 85, V10, N1, P107(18)

JOURNAL ARTICLE LOCAL CONTINGENCY PLANNING IN THE U.S. IS CONSIDERED FROM THE PERSPECTIVE OF RESOURCES AVAILABLE AT STATE AND FEDERAL LEVELS FOR HAZARDOUS MATERIALS ACCIDENTS AND EMERGENCY SPILLS. THE NAT'L RESPONSE NETWORK IS DETAILED IN TERMS OF THE UNITS AND LEVELS OF GOVERNMENT CONSTITUTING THAT CAPABILITY. SPECIAL FEATURES OF LOCAL PLANS ARE DISCUSSED, EMPHASIZING COMMUNICATIONS WITH STATE AND FEDERAL RESPONSE AGENCIES. REGIONAL EPA CONTACTS FOR SPILL RESPONSE PLANNING ASSISTANCE ARE LISTED. (3 DIAGRAMS, 1 MAP, 31 REFERENCES, 2 TABLES,)

DESCRIPTORS: *CHEMICAL SPILLS ; *EMERGENCY PLANNING ; *FED ENV PROGRAMS
*STATE LOCAL ENV PROGRAMS ; FED ENV AGENCIES

REVIEW CLASSIFICATION: 02

(ENV)

0277727 EIM8502-009407

SUPPORTING DECISION MAKING AND PROBLEM SOLVING DURING RARE HIGH RISK EVENTS.

Embrey, D. E.; Humphreys, P. C.

Human Reliability Associates Ltd, Engl

Conference Title: Ergonomics Problems in Process Operations.

Conference Location: Birmingham, Engl Conference Date: 1984 Jul 11-13

Sponsor: Inst of Chemical Engineers, Rugby, Engl; Ergonomics Soc, Hockley, Engl

Source: Institution of Chemical Engineers Symposium Series n 90. Publ by Inst of Chemical Engineers (EFCE Publ Series n 38), Rugby, Engl p 148-150 1984

CODEN: ICESDB ISSN: 0307-0492

E.I. Conference No.: 05959

Language: English

Recently developed approaches for providing a decision support system appropriate for rare events are described. These start from the expertise possessed by experienced plant operators, which is elicited by means of an interactive computer system to produce an explicit model of their knowledge base regarding the relationships between indicators, causes and consequences. This can be used to model the diagnostic process where the operator starts from an observed pattern of indicators and attempts to infer events which may have led to this pattern. Computer programs LINK and EXPLORE are briefly described.

Descriptors: *PROCESS CONTROL--*Accident Prevention; DECISION THEORY AND ANALYSIS; HUMAN ENGINEERING; INDUSTRIAL PLANTS--Control; CHEMICAL PLANTS--Control; COMPUTER PROGRAMS

Identifiers: HIGH RISK PROCESS PLANT ABNORMALITIES; RARE EVENTS; DECISION SUPPORT SYSTEMS; ABSTRACT ONLY

Classification Codes: 731 (Automatic Control Principles); 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 402 (Buildings & Towers) ; 723 (Computer Software); 461 (Biotechnology) 73 (CONTROL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 40 (CIVIL ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 46 (BIOENGINEERING)

(EEM)

79-04868

The Swiss Emergency Organization for Nuclear and Chemical accidents.

Brunner, H.; Winiger, P.
Eidgenoessisches Institut fuer Reaktorforschung, Health Physics Div., CH-5303 Wuerenlingen, Switz.

Symposium on the handling of radiation accidents Vienna, Austria Feb. 28-Mar. 4, 1977
Handling of radiation accidents 1977. IAEA Proceedings Series. Subject Group: II. Nuclear Safety and Environmental Protection/Radiological Safety
pp. 291-300 Publ.Yr: 1977
Publ: Vienna International Atomic Energy Agency
illus. refs. (Some in Ger.)
Abs.
Languages: ENGLISH
Doc Type: CONFERENCE PAPER

History, basic concepts, organization and means of the Swiss Emergency Organization are described, and some specific problems and solutions are discussed. Preference is assigned to organizations, structures, and means already in existence. The frame for coordination of the efforts is given by the principal arrangements of the total defense. The most important installation is a permanent Monitoring Center operating 24 hr/d attached to the national weather service. The concept of the emergency organization is based on an analysis of the possible types of events, the sequences of phases of an accident, the dominant character of an incident, the protection objectives and the possible or available preventive and protective measures. The systematic analysis of these factors shows clearly in which cases the federal emergency organization has to operate and which events can be handled with the normal means of the civil authorities. Special topics such as the concept of dose limits, vertical evacuation to civil defense shelters or cellars and the project for an automatic

nationwide meteorological and radiological monitoring network are presented. (Am)

Descriptors: Switzerland; Government programs; Radiation; Monitoring methods; Government agencies
Identifiers: Swiss Emergency Organization; emergency planning
(POL)

0156309 *82-002131
THE TIME-BOMB ON LONDON'S DOORSTEP,
PEARCE FRED
* NEW SCIENTIST, NOV 5, 81, V92, N1278, P362 (4)

FEATURE ARTICLE THE BRITISH GAS CORPORATION'S METHANE TERMINAL ON CANVEY ISLAND REPRESENTS PERHAPS THE MOST HAZARDOUS INDUSTRIAL PLANT IN THE U.K. SIX OTHER FACTORIES LOCATED AT CANVEY ARE CLASSIFIED AS MAJOR HAZARDS BY THE HEALTH AND SAFETY EXECUTIVE. UPON INSPECTION, WARNING SYSTEMS HAVE BEEN FOUND INOPERATIVE, AND ''FAIL-SAFE'' TRIP MECHANISMS UNABLE TO BE TESTED DUE TO UNRELIABILITY. AT LEAST 35,000 PEOPLE WOULD BE ADVERSELY AFFECTED BY A METHANE CLOUD ESCAPE, YET IN TIMES OF ECONOMIC RECESSION THE TEMPTATION IS TO IGNORE THE RISK. (4 PHOTOS)

DESCRIPTORS: *CHEMICAL SPILLS ; *EMERGENCY PLANNING ; *UNITED KINGDOM ; *METHANE ; *AMMONIA ; *CHLORINE ; POLICY-PLANNING, NON U S
REVIEW CLASSIFICATION: 02
(ENV)

0121576 NIOSH-00146911
Toxic Chemicals And Public Protection
Anonymous
Toxic Substances Strategy Committee, Washington, D.C., 227 pages
May 1980
(OSH)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0167319 *83-006004
WATCHING OUR WASTES: A CITIZEN'S GUIDE TO HAZARDOUS WASTE IN NORTHERN NEW ENGLAND,
SULLIVAN MARK
MAINE ASSN OF CONSERVATION COMMISSIONS REPORT, UNDATED, (69)

A HANDBOOK TO AID NORTHERN NEW ENGLANDERS TO COMPREHEND HAZARDOUS WASTES-THEIR ORIGINS, BIOLOGICAL AND ENVIRONMENTAL EFFECTS, DISPOSAL METHODS, REGUALTIONS, AND COMMUNITY PLANNING-IS PRESENTED. ALTHOUGH MAINE, NEW HAMPSHIRE, AND VERMONT ARE NOT HEAVILY INDUSTRIALIZED, HAZARDOUS WASTES EMANATE FROM HOMES, SCHOOLS, INDUSTRIES, BUSINESSES, HOSPITALS, AND MANY OTHER SOURCES. A CHECKLIST FOR LOCAL OFFICIALS INVOLVES IDENTIFICATION OF HAZARDOUS WASTE SOURCES, FAMILIARITY WITH LAWS GOVERNING CONFIDENTIALITY, TRANSPORT ROUTES, EMERGENCY SPILL PROGRAMS, LAW ENFORCEMENT ACTIVITIES ON ILLEGAL DUMPING, MONITORING LANDFILLS FOR LARGE AMOUNTS OF HAZARDOUS WASTES, INTER-COMMUNITY COOPERATION, IDENTIFICATION OF A TOWN BOARD TO OVERSEE HAZARDOUS WASTE PROBLEMS, AND NEW ORDINANCES. APPENDICES INCLUDE A GLOSSARY; A LIST OF HAZARDOUS HOUSEHOLD CHEMICALS; RESPONSIBILITIES OF FEDERAL AGENCIES; AND CONTACTS INCLUDING INDUSTRY TRADE GROUPS, ENVIRONMENTAL GROUPS, NEW ENGLAND REGIONAL GOVERNMENT AGENCIES, AND OTHER LOCAL AGENCIES.

DESCRIPTORS: *NEW ENGLAND ; *HAZARDOUS WASTE MANAGEMENT ; *ENV ACTION-STATE LOCAL ; *MONITORING, ENV-SOLID WASTE ; *PUBLIC PARTICIPATION *EMERGENCY PLANNING ; *HAZARDOUS WASTE DISPOSAL ; *REGULATIONS, ENV ; CARCINOGENIC AGENTS ; GROUNDWATER ; INCINERATION ; FLAMMABILITY ; CHEMICAL NEUTRALIZATION ; CHEMICAL SPILLS
REVIEW CLASSIFICATION: 17
(ENV)

0137159 79-004396
WATER-1977 (SAFETY ASPECTS OF TOXIC AND HAZARDOUS SPILLS),
WOOD WILLIAM S.
WILLIAM S. WOOD & ASSOC. PA,
AICHE SYM SERIES 178, 1978, V74, N178, P11 (3)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

II. PREVENTION

D. COMMUNITY AWARENESS AND ACTIVITIES:

TITLE: **Bhopal: a People's view of Death, Their Right to Know and Live: a Reconstruction of the Gas Tragedy, Its background, and aftermath, from Press Reports and Local Information.**
PUBLISHER: Bhopal : Eklavye.
DATE: 1985.
(LC)

1218014
CMA's new emergency response program.
* Chemical Week July 10, 1985 p. 44,45

CMA has developed Community Awareness and Emergency Response (CAER) and the National Chemical Reponse Information Center (NCRIC) as 1st-response systems for chemical accidents, following the Bhopal, India, tragedy. CAER will be coordinator and NCRIC will provide the public and emergency response organizations with information about chemicals and advice or assistance during emergencies. CAER will bring together plant managers and local emergency responders.

*1USA *United States *2800000 *Chemicals & Allied Products *29 *public affairs
(PRO)

1183702 PB86-162260/XAB
Perception of Threat by a Noxious Gas Accident and the Reported Coping Style (Perception av Hotet fran Gasolyckan i Karlskoga och Rapporterad Handlingsstrategi)
Shalit, B.
Foersvarets Forskningsanstalt, Stockholm (Sweden).
Corp. Source Codes: 063330000
Report No.: FOA-C-50036-H3
Jan 86 43p
Summary in Swedish.
Languages: English
NTIS Prices: PC E03/MF E01 Journal Announcement: GRAI8611
Country of Publication: Sweden

Part of a small town in Sweden was covered by an Oleum gas cloud as a result of an industrial accident. Although no serious damage was caused at the time, unclear threat, resulted in partial evacuation as well as the shut down of transport, schools, business etc. The perception of this threat by those exposed to the gas as well as by a control group was mapped by means of a special instrument - the Wheel - as well as by intensive interviews. The report describes and analyzes the relationship between the perception of the threat and the reported coping style with it. Results show that the quality of perception assessed along three dimensions: Structure, involvement, and sense of control, can predict the type and effectiveness of coping with the perceived stress.

Descriptors: *Coping; *Air pollution; *Accidents; Hazardous materials; Stress(Physiology)

Identifiers: *Foreign technology; *Chemical spills; *Occupational safety and health; Air pollution effects(Humans); NTISTFSEAB

Section Headings: 6E (Biological and Medical Sciences--Clinical Medicine) ; 13B (Mechanical, Industrial, Civil, and Marine Engineering--Civil Engineering); 57U (Medicine and Biology--Public Health and Industrial Medicine); 68A (Environmental Pollution and Control--Air Pollution and Control); 68G (Environmental Pollution and Control--Environmental Health and Safety)

(NTIS)

1210804

Teleconferences on chemical accidents.

* Chemical & Engineering News June 24, 1985 p. 19

A nationwide program of 7 teleconferences on issues in planning ways to cope with hazardous materials emergencies is being sponsored by the Federal Emergency Management Administration. The teleconferences will be sent via satellite to public and private sector officals involved in such planning. The 1st program will deal with case studies illustrating how communities are working with various parties on dealing with the problems of hazardous materials accidents. Presentations on the role of transportation and state and federal govts in the planning process will also be made.

*1USA *United States *4953700 *Hazardous Waste Treatmnt,Storge,Disposl *29 *public affairs

(PRO)

II. PREVENTION

E. LEGISLATION/REGULATION/COMPLIANCE:

1. PREVENTION LAWS:

0377253 EIM8604-023858
ASSESSMENT OF TOXIC HAZARDS.
Bridges, James W.
Univ of Surrey, Robens Inst of Industrial & Environmental Health & Safety, Guildford, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 413-428 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0377250 EIM8604-023855
BASIC APPROACH FOR THE ANALYSIS OF RISKS FROM MAJOR TOXIC HAZARDS.
Pape, R. P.; Nussey, C.
Health & Safety Executive, Major Hazards Assessment Unit, Bootle, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 367-388 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0107293 *75-007153
CONTROL OF OIL AND OTHER HAZARDOUS MATERIALS,
HYLAND, JOHN R.
EPA OFFICE OF WATER PROGRAM OPERATIONS, CINCINNATI,
NTIS REPORT PB-238 096, JUN 74 (183)

SPECIAL REPORT A COURSE TRAINING MANUAL CONCERNS THE OIL SPILL PROBLEM, PREVENTION, CONTROL, AND TREATMENT. THREE OUTLINES DEAL WITH HAZARDOUS MATERIALS; FIVE CONCERN SOURCES OF THE SPILL PROBLEMS; SIX OUTLINES DEAL WITH SAMPLING AND THE CHARACTERISTICS OF OIL; 11 DESCRIBE PREVENTION, CONTROL, AND SPECIFIC TREATMENT METHODS; AND FOUR CONCERN LEGISLATION AND THE LEGAL RESPONSE. (NUMEROUS REFERENCES)

DESCRIPTORS: *INSTRUCTION MANUALS ; *OIL SPILL PREVENTION ; *CHEMICAL SPILLS ; *OIL SPILL CLEANUP ; *LEGISLATION, ENV
REVIEW CLASSIFICATION: 12
(ENV)

0377229 EIM8604-023834
DEVELOPMENTS IN THE CONTROL OF MAJOR HAZARDS.
Barrell, A. C.
Health & Safety Executive, Major Hazards Assessment Unit, Bootle, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 1-12 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0110498 76-001937
FEDERAL ENVIRONMENTAL LAWS AND REGULATIONS,
ZARYTKIEWICZ EDWARD D.
FLUOR ENGINEERS AND CONSTRUCTORS,
* CHEMICAL ENGINEERING, OCT 6, 75, V82, N21, P9 (4)

SURVEY REPORT MAJOR ENVIRONMENTAL REQUIREMENTS OF NEPA 69, THE CLEAN AIR ACT OF 1970, THE FEDERAL WATER POLLUTION CONTROL ACT OF 1972, EPA AND U.S. COAST GUARD SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLANS, THE SOLID WASTE DISPOSAL ACT OF 1965 AND THE RESOURCE RECOVERY ACT OF 1970, THE NOISE CONTROL ACT OF 1972, THE FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT, AND THE SAFE DRINKING WATER ACT ARE REVIEWED. (5 TABLES)

DESCRIPTORS: *NATL ENV POLICY ACT 69 ; *FED WATER POLL CONT ACT 72 ; *CLEAN AIR ACT 70 ; *OIL SPILL PREVENTION ; *SOLID WASTE DISPOSAL ACT 65 ; RESOURCE RECOVERY ACT 70 ; NOISE CONTROL ACT 72 ; FED INSECT FUNG RODENT ACT 72 ; SAFE DRINKING WATER ACT 74 ; EPA, FEDERAL ; U S COAST GUARD ; AIR QUALITY STANDS, AMBIENT ; LAW ENFORCEMENT, ENV-FED ; LAND USE PLANNING
REVIEW CLASSIFICATION: 07
(ENV)

1189694 PB86-865268/XAB
Hazardous Materials Transportation. 1977-April 1986 (Citations from the NTIS Database)
(Rept. for 1977-Apr 86)
National Technical Information Service, Springfield, VA.
Corp. Source Codes: 055665000
May 86 293p
Supersedes PB85-858744.
Languages: English Document Type: Bibliography
NTIS Prices: PC N01/MF N01 Journal Announcement: GRAI8613
(NTIS)

******** SEE SECTION II-B FOR MORE DETAIL ********

1130442 DATABASE: NNI File 111
Industrial New Jersey girds to prevent toxic disasters. (chemical accidents: the hidden danger, part II)
Wald, Matthew L.
* New York Times v135 p1(N) pA1(L) Nov 26 1985
CODEN: NYTIA
col 1 058 col in.
illustration; photograph
EDITION: Tue
GEOGRAPHIC LOCATION: New Jersey
GEOGRAPHIC CODE: NNUSLNJ SIC CODE: 2800

DESCRIPTORS: New Jersey--environmental policy; chemical industries--safety measures; hazardous wastes--safety measures; Chemical Industry Council of New Jersey--safety measures
(NNI)

1295372
Kean signs bill to curb toxic-chemical accidents.
* New York Times (National Edition) January 9, 1986 p. 14

The state of New Jersey will require chemical plants to develop plans for preventing the accidental release of toxic chemicals under a new law, the 1st of its kind in the US. The law requires every plant that produces or uses hazardous chemicals to have an accident-prevention program that is approved by the State Department of Environmental Protection. Failure to

comply with the law could result in fines of up to $50,000. The state will have the power to review each firm's operations and require additional measures to reduce the risk of an accident and to develop plans for firms that fail to submit their own programs. Firms that violate provisions of the law can be fined $10,000 for the 1st offense, $20,000 for the 2nd and up to $50,000 for the 3rd. Substances affected under the new law are methyl isocyanate, allyl chloride, bromine, chlorine, phosphorus trichloride, phosgene, hydrogen fluoride, hydrogen chloride, hydrogen sulfide, hydrogen cyanide and toluene-2,4-diisocyanate.

*1234 *New Jersey *2800000 *Chemicals & Allied Products *42 *pollution (PRO)

1332293
New Jersey law requires storage registration.
Modern Paint & Coatings March 0, 1986 p. 58

Governor TH Kean of New Jersey has signed into law a bill to prevent accidental release of toxic chemicals into the environment. Companies that handle or store hazardous substances must register with the state and develop risk management plans to handle emergencies. The new measure is the 1st of its kind in the US. The New Jersey Department of Environmental Protection has been given the authority to review companies' risk management plans and order changes. The interim list of toxic chemicals includes phosgene, methyl isocyanate, phosphorous trichloride, toluene-2,4-diisocyanate, hydrogen sulfide, hydrogen fluoride, hydrogen cyanide, hydrogen chlorine, bromine, chlorine and allyl chloride.

*1234 *New Jersey *2800000 *Chemicals & Allied Products *93 *regulation (PRO)

0178112 *85-019984
NEW JERSEY'S CRACKDOWN ON TOXIC EMISSIONS,
RICH LAURIE A.
* CHEMICAL WEEK, MAR 13, 85, V136, N11, P65(3)

JOURNAL ARTICLE MAJOR TOXIC AIR EMISSION INCIDENTS OCCURRED DURING OCTOBER 1984 THROUGH JANUARY 1985 IN NEW JERSEY'S HIGHLY INDUSTRIALIZED ARTHUR KILL REGION. STRINGENT ENFORCEMENT ACTIONS HAVE BEEN IMPLEMENTED BY THE STATE'S DEPT. OF ENV. PROTECTION. PENALTIES FOR TOXIC EMISSIONS HAVE BEEN RAISED FROM $2500/DAY TO $10,000-50,000/DAY. BOTH E.I. DU PONT DE NEMOURS & CO. AND AMERICAN CYANAMID, WHOSE PLANTS ARE RESPONSIBLE FOR SIX

OF THE 13 INCIDENTS IN QUESTION, WERE CHARGED WITH HEAVY FINES AND ADMINISTRATIVE ORDERS REQUIRING THE COMPANIES TO PERFORM PLANT WIDE SAFETY EVALUATIONS OF THEIR OPERATIONS. (2 PHOTOS, 1 TABLE,)

DESCRIPTORS: *NEW JERSEY ; *AIR POLLUTION INCIDENTS ; *AIR QUALITY PROGRAMS ; *STACK EMISSION CONTROL ; CHEMICAL SPILLS ; AIR POLL CONT FINANCING
REVIEW CLASSIFICATION: 01
(ENV)

0140722 80-000791
OIL AND HAZARDOUS SUBSTANCE SPILLS-LEGISLATIVE RACE TO PREVENT DISASTER,
KISH T.
* WPCF J, NOV 79, V51, N11, P2569 (5)

FEATURE ARTICLE EPA DATA INDICATE THAT, IN THE U.S. IN ANY GIVEN YEAR, ABOUT 11,000 OIL SPILLS AND ABOUT 3500 SIGNIFICANT CHEMICAL SPILLS OCCUR. SEVERAL LARGE FUNDING PROPOSALS DEALING WITH PREVENTION AND CONTROL OF SUCH SPILLS ARE CURRENTLY BEING DEBATED IN CONGRESS. ONE BILL SETS UP A $1.625 BILLION FUND TO COVER PAYMENT OF COSTS FOR REMOVAL, CLEANUP, CONTAINMENT, THIRD PARTY DAMAGES, AND LOSS OF INCOME INCURRED BY OIL OR CHEMICAL SPILLS. ANOTHER BILL SETS UP A FUND TO COVER CLEANUP COSTS INCURRED BY CHEMICAL SPILLS AND RELEASES INTO NAVIGABLE WATERS, LAND, AIR, GROUNDWATER, AND COASTAL WATERS. (3 PHOTOS)

DESCRIPTORS: *OIL SPILLS ; *CHEMICAL SPILLS ; *LEGISLATION, ENV-FED ; *HAZARDOUS WASTE MANAGEMENT ; *HAZARDOUS WASTE DISPOSAL ; *OIL SPILL PREVENTION ; *POLLUTION LIABILITY INSURE ; TRANSPORTATION SAFETY
REVIEW CLASSIFICATION: 02
(ENV)

0384642 EIM8605-031247
RECENT DEVELOPMENTS IN THE REGULATION OF INDUSTRIAL CHEMICALS UNDER TSCA.
Plamondon, Joseph; Keener, R. L.
Rohm & Haas Co, Philadelphia, PA, USA
Conference Title: Radcure '84: Conference Proceedings (Eighth International Conference on Radiation Curing).
Conference Location: Atlanta, GA, USA Conference Date: 1984 Sep 10-13

Source: Radiation Curing, Conference Proceedings 8th. Publ by Assoc for Finishing Processes of SME, Dearborn, MI, USA p 14. 22-14. 34 1984
E.I. Conference No.: 06224
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0174210 *84-006119
ROUTINE SHIPMENTS OF ESSENTIAL GOODS ARE FREIGHTED WITH SPECIAL RISKS,
MACFADYEN J. T.
* SMITHSONIAN, APR 84, V15, N1, P44 (10)

****** SEE SECTION IIB FOR MORE DETAIL ******

0181648 *86-037394
TOXIC CHEMICAL ACCIDENTS IN NEW YORK STATE: THE RISK OF ANOTHER BHOPAL,
JAFFEE, SUSAN ; WARD, DOUGLAS H.
NEW YORK STATE ATTORNEY GENERAL ENV PROTECTION JAN 14, 86 (75)

STATE/LOCAL GOVT REPORT: THE PROSPECTS FOR A MAJOR CHEMICAL DISASTER IN NEW YORK, SIMILAR TO THE ONE THAT OCCURRED IN DECEMBER 1984 IN BHOPAL, INDIA, ARE EXAMINED. RECORDS OF TOXIC CHEMICAL ACCIDENTS IN NEW YORK STATE^ WHICH OCCUR EVERY DAY^ ARE COMPILED. FROM JANUARY 1983 TO NOVEMBER 1985 THERE WERE 706 REPORTED ACCIDENTS; THIS TOTAL ACTUALLY UNDERESTIMATES THE NUMBER OF ACCIDENTS. LAWS AND REGULATIONS COMPOSING THE STRANDS OF THE LEGAL SAFETY NET INTENDED TO PROTECT THE PUBLIC AND ENVIRONMENT FROM TOXIC CHEMICAL ACCIDENTS ARE SUMMARIZED. ANALYSIS SHOWS THAT MANY ACCIDENTS GO UNREPORTED, RESPONSIBLE PARTIES ARE NOT PUNISHED, COMMUNITIES ARE NOT INFORMED ABOUT TOXIC CHEMICALS IN THEIR AREA, AND ACCIDENT PREVENTION REGULATIONS AND EMERGENCY PLANS DO NOT EXIST.

DESCRIPTORS: *NEW YORK ; *COST BENEF ANALYSIS; CHEMICAL ; *CHEMICAL CONTAM CONTROL ; *CHEMICAL USAGE ; *CHEMICAL SPILLS ; LAW, ENV; FED ; LAW, ENV; STATE LOCAL ; EMERGENCY PLANNING ; TOXIC SUBSTANCES CONT ACT 76
REVIEW CLASSIFICATION: 02
(ENV)

II. PREVENTION

E. LEGISLATION/REGULATION/COMPLIANCE:

2. RIGHT-TO-KNOW:

0168848 *84-000781
LAWS FOR THE REGULATION OF CARCINOGENS: IDENTIFYING AND ESTIMATING THE RISKS THAT THE LAWS SEEK TO REDUCE ,
GOUGH MICHAEL
OTA,
* TOXIC SUBSTANCES J, SPRING 83, V4, N4, P251 (26)
(ENV)

****** SEE SECTION I-D FOR MORE DETAIL ******

II. PREVENTION

E. LEGISLATION/REGULATION/COMPLIANCE:

3. HEARINGS:

0180722 *86-033171
THE ABILITY TO RESPOND TO TOXIC CHEMICAL EMERGENCIES,
* SEN COMM ENV PUBLIC WORKS HEARINGS 99 CON 1 99-12, FEB 18, 85 (216)

HEARING TRANSCRIPT HEARINGS WERE CONDUCTED TO ASSESS STATE AND FEDERAL GOVERNMENTAL ABILITY TO RESPOND TO SUDDEN RELEASES OF TOXIC CHEMICALS INTO AIR AND WATER. RESPONSIBILITIES OF OSHA, EPA, AND STATE EMERGENCY RESPONSE SUPPORT STAFFS IN THIS REALM ARE DISCUSSED. EFFORTS TO PREVENT ACCIDENTAL INDUSTRIAL RELEASES OF TOXIC SUBSTANCES ARE SURVEYED, AND REFERENCE IS MADE TO THE DECEMBER 1984 CHEMICAL RELEASE IN BHOPAL, INDIA. TESTIMONY WAS PRESENTED BY RICHARD GOLDSTEIN OF THE NEW JERSEY DEPT. OF HEALTH; JACK MCGRAW OF EPA; AND OTHERS. ASSOCIATED DOCUMENTS AND MEMORANDA ARE TRANSCRIBED.

DESCRIPTORS: *SEN COMM ENV PUBLIC WORKS ; *EMERGENCY PLANNING ; *CHEMICAL SPILLS ; *HEALTH SAFETY, OCCUPATIONAL ; *CHEMICAL STANDARDS ; *ENV ACTION-STATE LOCAL ; CONTAMINATION INCIDENTS ; FIRES ; CONGRESSIONAL HEARINGS
REVIEW CLASSIFICATION: 02
(ENV)

0137883 *79-005095
HAZARDOUS MATERIALS ACCIDENT REPORTING,
* HSE COMM GOVT OPERATIONS HEARINGS 95 CON 2, APR 25, 78 (404)

HEARING TRANSCRIPT HEARINGS WERE HELD TO CONSIDER THE ISSUE OF HAZARDOUS MATERIALS ACCIDENT REPORTING. IN 1976, THE U.S. NAT'L TRANSPORTATION SAFETY BOARD ISSUED RECOMMENDATIONS INTENDED TO REDUCE THE NUMBER OF CASUALTIES AMONG FIREFIGHTERS AND OTHER EMERGENCY RESPONSE PERSONNEL FROM HAZARDOUS MATERIAL ACCIDENTS. VERY LITTLE HAS BEEN DONE TO IMPLEMENT THE RECOMMENDATIONS, INCLUDING THOSE DEALING WITH ACCIDENT REPORTING. THE MERITS OF THE RECOMMENDATIONS, ACTIONS TAKEN BY DOT AND OTHER AGENCIES, AND METHODS OF IMPLEMENTING THE RECOMMENDATIONS ARE DISCUSSED. TESTIMONY WAS SUBMITTED BY OFFICIALS OF FIRE PROTECTION ORGANIZATIONS, BY A MEMBER OF THE MANUFACTURING CHEMISTS ASSN., AND BY NTSB MEMBERS. CORRESPONDENCE, REPORTS, AND STATEMENTS ARE TRANSCRIBED. (NUMEROUS DIAGRAMS, GRAPHS, PHOTOS)

DESCRIPTORS: *HSE COMM GOVT OPERATIONS ; *TRANSPORTATION ACCIDENTS ; *CHEMICAL TRANSPORT ; *CHEMICAL SPILLS ; *FIRESF; *TRANSPORTATION STANDARD *CHEMICAL STANDARDS ; *DATA REPORTING, MANDATORY ; *EMERGENCY PLANNING ; *RAIL TRANSPORTATION ; INSTRUCTION MANUALS ; CHEMICAL CONTAM CONTROL ; U S DEPT TRANSPORTATION ; CONGRESSIONAL HEARINGS
REVIEW CLASSIFICATION: 02
(ENV)

0180740 *86-033393
THE IMPLICATIONS OF THE INDUSTRIAL DISASTER IN BHOPAL, INDIA,
* HSE COMM FOREIGN AFFAIRS HEARINGS 98 CON 2, DEC 12, 84 (80)

HEARING TRANSCRIPT HEARINGS WERE CONVENED TO CONSIDER THE PUBLIC HEALTH IMPLICATIONS ASSOCIATED WITH INDUSTRIAL ACCIDENTS SUCH AS THE DECEMBER 3, 1984 INCIDENT IN BHOPAL, INDIA. THE ACCIDENTAL RELEASE OF METHYL ISOCYANATE FROM A UNION CARBIDE CORP. FACILITY LED TO THE DEATH OF NEARLY 3000 PEOPLE AND PERMANENTLY INJURED THOUSANDS MORE. IMPLICATIONS OF THE ACCIDENT FOR INDO-AMERICAN RELATIONS ARE ASSESSED, AND MEASURES THE U.S. GOVERNMENT MIGHT TAKE TO RENDER AID AND PREVENT FURTHER INCIDENTS ARE EXPLORED. ASSOCIATED DOCUMENTS, TESTIMONY, AND MEMORANDA ARE TRANSCRIBED.

DESCRIPTORS: *HSE COMM FOREIGN AFFAIRS ; *INDIA ; *CHEMICAL SPILLS ; *CONTAMINIATION INCIDENTS ; *UNION CARBIDE CO ; *CHEMICAL DAMAGE ; ENV ACTION-FED ; CONGRESSIONAL HEARINGS
REVIEW CLASSIFICATION: 02
(ENV)

0178173 *85-015677
OSHA OVERSIGHT: WORKER HEALTH AND SAFETY IN UNION CARBIDE'S MIC UNIT,
* HSE COMM EDUCATION LABOR HEARINGS 98 CON 2, DEC 12, 84 (74)

HEARING TRANSCRIPT THE CHEMICAL TRAGEDY IN BHOPAL, INDIA AND SIMILAR EVENTS IN THE U.S. RAISE SERIOUS QUESTIONS ABOUT THE HEALTH AND SAFETY OF THOSE WHO WORK IN OR LIVE NEAR CHEMICAL PLANTS THAT MANUFACTURE OR STORE TOXIC AND HAZARDOUS MATERIALS SUCH AS METHYL ISOCYANATE. THE UNION CARBIDE PLANT IN INSTITUTE, WV, IS THE SUBJECT OF THIS INQUIRY INTO CHEMICAL PLANT SAFETY, PARTICULARLY THE PROPER IMPLEMENTATION OF EXISTING WORKER SAFETY REGULATIONS AND THE POTENTIAL FOR NEW LEGISLATION.

DESCRIPTORS: *HSE COMM EDUCATION LABOR ; *U S OCCUPTN SAFETY HTH ADMIN ; *UNION CARBIDE CO ; *HEALTH SAFETY, OCCUPATIONAL ; *CONTAMINATION INCIDENT *INDIA ; *CHEMICAL STANDARDS ; WEST VIRGINIA ; VOLATILITY ; U S NATL INST OCCUPTN SF HTH ; EMERGENCY PLANNING ; CONGRESSIONAL HEARINGS
REVIEW CLASSIFICATION: 02
(ENV)

TITLE: **Release of Poison Gases and Other Hazardous Air Pollutants from Chemical Plants. Joint Hearing Before the Subcommittee Transportation, and Tourism of the Committee on Energy and Commerce, House of Representatives, 99th Congress, 1st Session, Mar. 26, 1985.**
AUTHOR: U.S. Congress House Committee on Energy and Commerce, Subcommittee on Health and the Environment.
SOURCE: Washington, D.C. : G.P.O., 1985.
(LC)

TITLE: **Toxic Release Control Act of 1985, Hearings, 99th Congress, 1st Session on H.R. 2576, June 11 and 19, 1985.**
AUTHOR: U.S. Congress, House Committee on Energy and Commerce, Subcommittee on Health and the Environment.
SOURCE: Washington, D.C. : G.P.O., 1985.
(LC)

II. PREVENTION

E. LEGISLATION/REGULATION/COMPLIANCE:

4. ANALYSIS & COMMENTS

TITLE: **Bhopal: Its Implications for American Industry.**
AUTHOR: Kendall, Rick.
SOURCE: Occupational Hazards, Vol. 47, May 1985: 67-72.
NOTES: Describes the Accidental Leak of Methyl Isocyanate in Bhopal, India, and Discusses Resultant Legislative Initiatives in the U.S.
(LC)

TITLE: **The Bhopal Tragedy: Social and Legal Issues: A Symposium.**
SOURCE: Texas International Law Journal, Vol. 20, 1985: 267:339.
NOTES: These articles were initially prepared for a colloquium held at the University of Texas School of Law on Feb. 6, 1985.
(LC)

1259376
Carbide cited for safety violations.
* Chemical & Engineering News October 7, 1985 p. 6

Union Carbide has been cited by OSHA for several willful violations of safety regulations at its Institute, West Virginia, plant, following the accidental release of a mixture of chemicals from a temporary storage tank. Carbide allegedly failed to follow standard operating procedures when transferring the reaction mixture to the tank and the plant lacked the proper engineering controls to prevent air contamination in the event of a leak. OSHA also cited the firm for not making emergency respiratory protective equipment quickly accessible to employees. Carbide, which faces fines of $32,100, will appeal the citations.

*1USA *United States *2800000 *Chemicals & Allied Products *93 *regulation; *Union Carbide; Duns No: *00-128-9008; Ticker: *UK; CUSIP: *905581
(PRO)

0023908 EIM8207-005137
COMPUTER-AIDED APPLICATION OF SAFETY LAW AND REGULATION.
Ohnishi, N.
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 10/791-10/803 1980

E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL INDUSTRY--*Accident Prevention
Identifiers: COMPUTER-AIDED; SAFETY LAW; CHEMICAL INDUSTRY; CHEMICAL PLANTS; SAFETY REGULATIONS; COMPUTER-AIDED PROCESS DESIGN; STRUCTURE OF LAWS; COMPUTER-AIDED LAW APPLICATION SYSTEM
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

0377229 EIM8604-023834
DEVELOPMENTS IN THE CONTROL OF MAJOR HAZARDS.
Barrell, A. C.
Health & Safety Executive, Major Hazards Assessment Unit, Bootle, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 1-12 1985
CODEN: ICESDB ISSN: 0307-0492 ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0181861 *86-039768
ENVIRONMENT: MAJOR RISKS AND COMPENSATION,
SMETS, HENRI OECD ENV DIRECTORATE,
OECD OBSERVER, MAY 85, N134, P29(3)

JOURNAL ARTICLE: WITH FEW EXCEPTIONS, ACCIDENTS IN THE CHEMICALS INDUSTRY DO NOT SEEM TO HAVE INVOLVED COMPENSATION FOR THE VICTIMS OF MORE THAN $200 MILLION PER INCIDENT. TOTAL COMPENSATION FOR ENVIRONMENTAL DAMAGE CAUSED BY CHEMICALS IS NOT VERY HIGH, BECAUSE THE MOST COSTLY ACCIDENTS HAVE BEEN FEW IN NUMBER. SPECIAL COMPENSATION SYSTEMS FOR ENVIRONMENTAL DAMAGE HAVE BEEN INTRODUCED IN SEVERAL NATIONS. GOVERNMENTS MUST RECOGNIZE THE RIGHT OF EVERYONE TO FULL AND RAPID COMPENSATION FOR DAMAGE CAUSED BY CHEMICAL POLLUTION.

DESCRIPTORS: *CHEMICAL SPILLS ; *ECON IMPACT; CHEM POLL ; *CONTAMINATION INCIDENTS ; *CHEM POLL CONT FINANCING ; *POLLUTION LIABILITY INSURE ; OIL SPILLS ; NUCLEAR POWER PLANTS
REVIEW CLASSIFICATION: 02
(ENV)

1146954
EPA Eases Rules Covering Spills Of 160 Chemicals.
* Wall Street Journal 3 Star, Eastern (Princeton, NJ) Edition February 15, 1985 p. 54

Environmental Protection Agency eased reporting rules for accidental spills of 160+ hazardous industrial chemicals and proposed easing requirements on 41 others. The agency issued final rules for 40 chemicals allowing firms or plant managers to avoid notifying the government unless the accidental release involves 5,000 pound or more. The reporting limit previously established was 1 pound. Environmental Protection Agency did not change requirements for accidental leaks of methyl isocyanate.>

*1USA *United States *2800000 *Chemicals & Allied Products *93 *regulation
(PRO)

0161288 *83-000173
EUROPE FINALLY RESPONDS TO SEVESO,
MANNON JAMES H.
* CHEMICAL BUSINESS, OCT 18, 82, P41 (4)

FEATURE ARTICLE EEC HAS FINALLY RESPONDED TO THE 1976 SEVESO CHEMICAL ACCIDENT THAT OCCURRED IN ITALY, WITH A ''POST-SEVESO'' DIRECTIVE. THE DIRECTIVE WILL BREAK NEW GROUND IN ITS STRATEGY FOR PREVENTING INDUSTRIAL ACCIDENTS INVOLVING HUMAN EXPOSURE TO TOXIC SUBSTANCES. THE ACCIDENT OCCURRED WHEN A BURST SAFETY DISC IN AN HERBICIDE PLANT RELEASED A CLOUD OF CHEMICALS INTO THE ATMOSPHERE. HUNDREDS OF PEOPLE SUFFERED SKIN PROBLEMS FROM CONTACT WITH 2,4,5-T WITH DIOXIN. MANY PEOPLE HAD TO LEAVE THEIR HOMES AND THOUSANDS OF ANIMALS WERE SLAUGHTERED. CHEMICAL INDUSTRY REACTION TO THE DIRECTIVE IS ASSESSED. (3 PHOTOS)

DESCRIPTORS: *CHEMICAL CONTROL ; *WESTERN EUROPE ; *POLICY-PLANNING, INT *EMERGENCY PLANNING ; *CHEMICAL DAMAGE ; EXPLOSIONS ; EUROPEAN ECONOMIC COMMUNITY ; ITALY
REVIEW CLASSIFICATION: 02
(ENV)

0272580 EIM8501-004260
FUTURE HEALTH AND SAFETY TRAINING AND MANAGEMENT IN INDUSTRY.
Hawthorn, R.; Eng, P.
Industrial Accident Prevention Assoc, Toronto, Ont, Can
Conference Title: Proceedings - 33rd Canadian Chemical Engineering Conference 1983.
Conference Location: Toronto, Ont, Can Conference Date: 1983 Oct 2-5
Sponsor: Canadian Soc for Chemical Engineering, Ottawa, Ont, Can
Source: Proceedings - Canadian Chemical Engineering Conference 33rd v 2. Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 795-800 1983
CODEN: PCECE7
E.I. Conference No.: 04160
Language: English
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL

0292601 EIM8505-024281
HEALTH IMPACT OF TOXIC WASTES: ESTIMATION OF RISK.
Kimbrough, Renate D.
US Dep of Health & Human Services, Cent for Disease Control, Atlanta, GA, USA
Conference Title: Analysis of Actual Versus Perceived Risks (Proceedings of the Society for Risk Analysis International Workshop).
Conference Location: Washington, DC, USA Conference Date: 1981 Jun 1-3
Source: Advances in Risk Analysis v 1. Publ by Plenum Press, New York, NY, USA and London, Engl p 259-265 1983
E.I. Conference No.: 04170
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0179811 *85-026195
INSPECTION REPORT: UNION CARBIDE, INSTITUTE, WV,
EPA REPORT, 1985 (140)
(ENV)

****** SEE SECTION II-B FOR MORE DETAIL ******

0168848 *84-000781

LAWS FOR THE REGULATION OF CARCINOGENS: IDENTIFYING AND ESTIMATING THE RISKS THAT THE LAWS SEEK TO REDUCE ,

GOUGH MICHAEL

OTA,

TOXIC SUBSTANCES J, SPRING 83, V4, N4, P251 (26)

REGULATORY DECISION-MAKING FOR CONTROL OF CANCER RISKS TO HUMANS IS GUIDED BY SPECIFIC LEGAL MANDATES AND ADMINISTRATIVE PROCEDURES. THESE DEPEND UPON TECHNICAL DETERMINATIONS CONCERNING THE EXISTENCE OF HAZARDS AND MAGNITUDE OF RISK. STATUTORY MANDATES AND LAWS THAT SEEK TO IMPROVE PUBLIC HEALTH BY REDUCING EXPOSURE TO CARCINOGENS ARE EXAMINED. THESE INCLUDE THE 1977 FEDERAL WATER POLLUTION CONTROL ACT AND THE 1976 TOXIC SUBSTANCES CONTROL ACT. A DIFFERENTIATION IS MADE BETWEEN BALANCING, RISK-BASED, AND SIGNIFICANT-RISK LAWS. REGULATORY DEFINITIONS CARCINOGENS, INHERENT DEGREES OF PROTECTION, RISK ASSESSMENT CONCEPTS, AND HAZARD IDENTIFICATION ISSUES ARE DISCUSSED. (1 DIAGRAM, 21 REFERENCES, 4 TABLES)

DESCRIPTORS: *CARCINOGENIC AGENTS ; *LAW, ENV-FED ; *CHEMICAL STANDARDS *COST BENEF ANALYSIS-CHEMICAL ; *FOOD ADDITIVES ; *HEALTH SAFETY, OCCUPATIONAL ; BENZENE ; SACCHARIN ; TOXIC SUBSTANCES CONT ACT 76 ; MEASUREMENTS & SENSING

REVIEW CLASSIFICATION: 02

(ENV)

0126578 78-001646

MANAGEMENT OF TOXIC CHEMICAL SPILLS

CROKE KEVIN G. ; RAUFER ROGER K.

(UNIV OF ILLINOIS MEDICAL CENTER), AND (ETA ENGINEERING, ILL),

* APCA J, JAN 78, V28, N1, P57 (4)

SURVEY REPORT: MANAGEMENT PROGRAMS ARE NEEDED TO CONTROL CHEMICAL SPILL EPISODES. ILLINOIS HAS PASSED A REGULATION REQUIRING THAT FIRMS PREPARE EMERGENCY PLANS FOR SUCH INCIDENTS. CHEMICALS THAT SHOULD BE REGULATED, PREPARATION OF FIRMS TO HANDLE ACCIDENTAL RELEASES, CHEMICALS THAT ARE IN GREATEST USE IN ILLINOIS, MAJOR INDUSTRIAL USERS OF TOXIC SUBSTANCES, AND COSTS OF REGULATION ARE DISCUSSED. A SURVEY DEMONSTRATES THAT INDUSTRY IS NOT PREPARED TO DEAL EFFECTIVELY WITH ACCIDENTS INVOLVING CHEMICAL SPILLS. (2 GRAPHS, 3 TABLES)

DESCRIPTORS: *ILLINOIS; *CHEMICAL SPILLS; *EMERGENCY PLANNING; *STATE LOCAL ENV AGENCIES; *SURVEYS; *STANDARD INDUSTRL CLASSIFCTN; *ECON IMPACT-CHEM POLL CONT; *REGULATIONS, ENV-STATE LOCAL; CHEMICAL STANDARDS

REVIEW CLASSIFICATION: 02

(ENV)

0166424 *83-005133
New Perspectives on Corporate Risk and Ways to Reduce It,
Gibson Michael M. ; Fahrenthold Paul ; Dahlgren Robert B.
(Richads Harris & Medlock, Dallas) and,; (Woodward-Clyde Consultants, San Francisco)
* Env Forum, Mar 83, v1, n11, p35 (7)

news report A systems approach to reducing corporate risk in toxic tort cases is presented. Components of the approach include such strategies as insurance—both general comprehensive liability coverage and environmental impairment liability coverage—and environmental audits. An historical perspective on the corporate risk and toxic torts issue is discussed. (1 drawing, 1 photo, 25 tables)

DESCRIPTORS: *ENV POLICY, GENERAL ; *POLLUTION LIABILITY INSURE ; *HAZARDOUS WASTE DISPOSAL ; *LITIGATION, ENV ; *WATER QUALITY PROGRAMS ;CHEMICAL SPILLS ; DISPOSAL SITES ; POLLUTION CONTROL INVESTMENT
REVIEW CLASSIFICATION: 07
(ENV)

1157713 211-07713
Port safety and coastal zone management the lack of site planning for waterfront facilities and marine traffic handling bulk hazardous cargoes. Presented at: 16. Annu. Conf. of the Marine Technology Society Washington, DC (USA) 6 Oct 1980}.
Golden,P.C.
US Coast Guard, Eighth Coast Guard District, New Orleans, LA, USA
Proc. Annu. Conf. Mar. Tech. Soc.
, } Marine Technology Society^Washington, DC (USA)., 1980.
LANGUAGES: English
SUMMARY LANGUAGES: English
DOC TYPE: Conference; Book
REPORT NO.: p 221-226
JOURNAL ANNOUNCEMENT: 8109

Rapidly expanding petrochemical and chemical refinery, storage, and manufacturing facilities, with related water transportation systems have significantly increased the risk of a major chemical accident in or along an urbanized port or waterway, in particular, the rapidly expanding ports in the Gulf of Mexico. Port safety regulations are engineering and operations oriented and will eventually fail to ensure the safe movement

and handling of bulk hazardous substances in urbanized areas as tonnages and vessel traffic congestion continue to increase. The only viable solution is coastal land use planning which can be used to locate these facilities and traffic routes in remote, unpopulated coastal and river areas.

GEOGRAPHIC DESCRIPTORS: ASW, Mexico Gulf
ENVIRONMENT: Marine
IDENTIFIERS: site selection; accidents; safety; cargoes
SECTION HEADING CODES: 2124; 2444; 2388
(AQU)

0372412 EIM8603-019017
PROCESS MODIFICATIONS AND NEW CHEMICALS.
Burch, William M.
US EPA, Office of Toxic Substances, Washington, DC, USA
Conference Title: 1985 Annual Meeting - American Institute of Chemical Engineers.
Conference Location: Chicago, IL, USA Conference Date: 1985 Nov 10-14
Source: Annual Meeting - American Institute of Chemical Engineers 1985. Publ by AIChE, New York, NY, USA Pap 101a, 15p 1985
E.I. Conference No.: 07699
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0384642 EIM8605-031247
RECENT DEVELOPMENTS IN THE REGULATION OF INDUSTRIAL CHEMICALS UNDER TSCA.
Plamondon, Joseph; Keener, R. L.
Rohm & Haas Co, Philadelphia, PA, USA
Conference Title: Radcure '84: Conference Proceedings (Eighth International Conference on Radiation Curing).
Conference Location: Atlanta, GA, USA Conference Date: 1984 Sep 10-13
Sponsor: Assoc for Finishing Processes of SME, Dearborn, MI, USA
Source: Radiation Curing, Conference Proceedings 8th. Publ by Assoc for Finishing Processes of SME, Dearborn, MI, USA p 14. 22-14. 34 1984
CODEN: RACUEP ISBN: 0-87263-158-3
E.I. Conference No.: 06224
Language: English

The Toxic Substances Control Act (TSCA), passed into law in 1977, gives the EPA broad authority to regulate both new and existing chemicals. Based on recent activities, 1984 promises to be a banner year for the issuance of new EPA rules, regulations and policies implementing TSCA. Many of these new activities will affect both manufacturers and processors of industrial chemicals. Among the expected impacts are increased raw material costs, increased restrictions on workplace practices and increased reporting and record-keeping requirements. The year 1984 also is expected to see an increase in EPA inspection activities and congressional debate on TSCA ammendments. This paper reviews these new developments and their impact on the radiation cure industry. (Author abstract)

Descriptors: *CHEMICALS--*Safe Handling; HAZARDOUS MATERIALS--Accident Prevention; INDUSTRIAL PLANTS--Health Hazards; INDUSTRIAL POISONS--Accident Prevention; CHEMICAL INDUSTRY--Accident Prevention; PROTECTIVE COATINGS--Curing

Identifiers: TOXIC SUBSTANCES CONTROL ACT; RISK ASSESSMENT; RISK MANAGEMENT; TOXICITY; ENVIRONMENTAL PROTECTION AGENCY; PREMANUFACTURING NOTIFICATIONS

Classification Codes: 803 (Chemical Agents & Basic Industrial Chemicals) ; 804 (Chemical Products); 914 (Safety Engineering); 802 (Chemical Apparatus & Plants); 813 (Coatings & Finishes); 816 (Plastics, Plant Equipment & Processes) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 81 (CHEMICAL PROCESS INDUSTRIES)

(EEM)

0176244 *85-005887

THE STATES' LUKEWARM RESPONSE TO BHOPAL,

RICH LAURIE A. ; MALONE SHERRY; SCHWARTZ JAMES; GIBB ROBINA

* CHEMICAL WEEK, FEB 20, 85, V136, N8, P26(3)

JOURNAL ARTICLE STATE OFFICIALS BELIEVE THAT THE DECEMBER 1984 CHEMICAL DISASTER IN BHOPAL, INDIA HAS HAD LITTLE OR NO EFFECT ON STATE LEGISLATIVE PACKAGES OR ENVIRONMENTAL PROGRAMS, EVEN IN HIGHLY INDUSTRIALIZED STATES. ECONOMIC CONSIDERATIONS ARE BEHIND THE FAILURE OF STATES TO MAKE A SIGNIFICANT RESPONSE TO THE ISSUES RAISED BY BHOPAL. THREE AMBITIOUS STATE PROJECTS IN NEW JERSEY, MICHIGAN, AND CALIFORNIA ARE OUTLINED, AND LEGISLATION IN ILLINOIS IS DESCRIBED. (3 REFERENCES,)

DESCRIPTORS: *CHEMICAL CONTAM CONTROL ; *POLICY-PLANNING, STATE LOCAL ; *LEGISLATION, STATE LOCAL ; *ILLINOIS ; *CALIFORNIA ; *MICHIGAN ; *NEW JERSEY ; CHEMICAL STANDARDS ; INDIA ; CONTAMINATION INCIDENTS
REVIEW CLASSIFICATION: 02
(ENV)

0180242 *85-029981
SUMMARY AND OPTIONS (PREVENTING ILLNESS AND INJURY IN THE WORKPLACE),

OTA REPORT H-256, APR 85, P3(24)
(ENV)

******** SEE SECTION I-D FOR MORE DETAIL ********

1138124 DATABASE: NNI File 111
Tangled rules on toxic hazards hamper efforts to protect public. (Chemical Accidents: the Hidden Danger, part 3)
Shabecoff, Philip
* New York Times v135 p1(N) pA1(L) Nov 27 1985
CODEN: NYTIA
col 2 058 col in.
illustration; photograph
EDITION: Wed
SIC CODE: 9511; 4953; 2800

DESCRIPTORS: United States. Environmental Protection Agency--rules and regulations; hazardous waste management industry--rules and regulations; chemical industries--rules and regulations; hazardous wastes--economic aspects; hazardous substances--rules and regulations; cost effectiveness--environmental aspects; environmental law--interpretation and construction; environmental health--rules and regulations; risk management--environmental aspects
(NNI)

III. MITIGATION

III. MITIGATION

A. RESPONSE TECHNIQUES:

0180185 *85-029358
AAR'S INDUSTRIAL CHEMICAL ACCIDENT RESPONSE INFORMATION SYSTEM
MEIER G. E.
ASSN OF AMERICAN RAILROADS, DC,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P172(12)

CONF PAPER: MANY INFORMATION SOURCES PRESENT WORTHWHILE DATA CONCERNING HAZARDS AND RESPONSES FOR CHEMICAL SPILLS. MOST SOURCES, HOWEVER, CONSIDER ONLY THE ACUTE EFFECTS OF A SPILL AND NEGLECT LONG-TERM CLEANUP CONSIDERATIONS. THE ASSN. OF AMERICAN RAILROADS HAS DEVELOPED A PROGRAM TO BRIDGE THE GAP BETWEEN FIRST RESPONSE AND LONGER TERM ENVIRONMENTAL CLEANUP. THE INDUSTRIAL CHEMICAL ACCIDENT RESPONSE INFORMATION SYSTEM IS A COMPUTER INFORMATION SYSTEM INTEGRATED WITH MATHEMATIC MODELS TO ALLOW REAL-TIME ASSESSMENT OF CHEMICAL RELEASE PROBLEMS. CURRENT CAPABILITIES OF THE SYSTEM ARE CITED. (1 DIAGRAM, 2 TABLES,)

DESCRIPTORS: *COMPUTER APPLICATIONS; *CHEMICAL SPILLS; *RAIL TRANSPORTATION; *EMERGENCY PLANNING; *ATMOSPHERIC DIFFUSION;DECONTAMINATION ; TRANSPORTATION ACCIDENTS
REVIEW CLASSIFICATION: 02
(ENV)

0257715 EIM8411-089545
ADVANCES IN THE TECHNOLOGY OF HAZARDOUS SPILL RESPONSE SYSTEMS.
Ellis, Howard M.
Enviroplan Inc, West Orange, NJ, USA
Conference Title: Proceedings of the 2nd Annual Hazardous Materials Management Conference.
Conference Location: Philadelphia, Pa, USA
Conference Date: 1984 Jun 5-7
Sponsor: Tower Conference Management Co, Wheaton, Ill, USA
Source:Proceedings of the Annual Hazardous Materials Management Conference 2nd.
Publ by Tower Conference Management Co, Wheaton, Ill, USA
p556-562 1984
CODEN: PAHCE8
E.I. Conference No.: 05237
Language: English

Descriptors: *HAZARDOUS MATERIALS--*Management
Identifiers: HAZARDOUS WASTE MANAGEMENT; HAZARDOUS SPILL RESPONSE SYSTEMS; EPCHEMS; ENVIROPLANS COMPUTER BASED HAZARDOUS SPILL RESPONSE SYSTEM; EVAPORATION OF POLLUTANTS; ADVERSE PUBLIC HEALTH EFFECTS; MITIGATION OF CHEMICAL SPILLS
Classification Codes: 452 (Sewage & Industrial Wastes Treatment); 912 (Industrial Engineering & Management); 804 (Chemical Products); 914 (Safety Engineering) 45 (POLLUTION & SANITARY ENGINEERING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)
(EEM)

0177055 *85-010147
AMMONIUM NITRATE
ENV CANADA ENV PROTECTION SERVICE REPORT, JUN 84 (81)

INFORMATION IS COMPILED TO BE USED BY CHEMICAL SPILL SPECIALISTS FOR DESIGNING COUNTERMEASURES TO AMMONIUM NITRATE SPILLS. PHYSICAL AND CHEMICAL DATA ARE COVERED; PRODUCTION AND USES OF THE COMPOUND IN CANADA ARE DISCUSSED. DISPERSION OF AMMONIUM NITRATE IN AIR AND WATER IS DESCRIBED, AND EQUATIONS ARE PRESENTED FOR CALCULATING BEHAVIOR IN THESE MEDIA. RECOMMENDED EXPOSURE LIMITS FOR HUMAN HEALTH, AQUATIC TOXICITY DATA, AND CLEANUP OPTIONS ARE INCLUDED. (NUMEROUS REFERENCES, TABLES)

DESCRIPTORS: *AMMONIA NITRATE; *CHEMICAL SPILLS; *DECONTAMINATION; *RIVERS; *WATER POLLUTION EFFECTS; *WATER QUALITY STANDARDS; CHEMICAL STORAGE; CANADA; MAXIMUM PERMISSIBLE EXPOSURE
REVIEW CLASSIFICATION: 02
(ENV)

0041201 EIM8209-032816
APPLICATION OF FOAMS TO HAZARDOUS CHEMICAL SPILLS.
Gross, S. S.
MSA Res Corp, Evans City, Pa, USA
Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.

Conference Location: Louisville, Ky, USA
Conference Date: 1980 May 13-15
Sponsor: EPA, Washington, DC, USA; US Coast Guard, Washington, DC, USA; Vanderbilt Univ, Nashville, Tenn, USA; Am Ind Hyg Assoc, Kansas City, Mo, USA; AIChE, New York, NY, USA; et al
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA p 88-91 1980
E.I. Conference No.: 00199
Language: English

Descriptors: *HAZARDOUS MATERIALS—*Spills
Identifiers: POLAR LIQUIDS; LIQUEFIED GASES; NONPOLAR LIQUIDS; FOAMS; PROTEIN; FLUOROPROTEIN; ALCOHOL; SURFACTANTS
Classification Codes: 452 (Sewage & Industrial Wastes Treatment); 804 (Chemical Products): 45 (POLLUTION & SANITARY ENGINEERING); 80 (CHEMICAL ENGINEERING)
(EEM)

0179325 *85-023920
CARBON DIOXIDE: ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS
ENV CANADA ENV PROTECTION SERVICE REPORT, NOV 84, P1(68)

AN ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS MANUAL FOR CARBON DIOXIDE IS PRESENTED. THE MANUAL IS INTENDED FOR USE BY SPILL SPECIALISTS FOR DESIGNING COUNTERMEASURES FOR SPILLS AND TO ASSESS THEIR IMPACT ON THE ENVIRONMENT. FACTORS SUCH AS COMMERCE AND PRODUCTION, MATERIAL HANDLING, CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, HUMAN HEALTH, AND SPILL COUNTERMEASURES ARE ADDRESSED. (6 DIAGRAMS, 15 GRAPHS, 17 REFERENCES, 10 TABLES,)

DESCRIPTORS: *CARBON DIOXIDE; *CHEMICAL CONTAM CONTROL; *HEALTH ENV; *CHEMICAL TRANSPORT; CHEMICAL SPILLS; WATER POLLUTION; CANADA
REVIEW CLASSIFICATION: 02
(ENV)

0182080 *86-040689
CASE HISTORY OF A MAJOR NITRIC ACID SPILL
MCVEIGH, THOMAS ROY F. WESTON INC, CO,; ET AL,; FJELDAHL, LANAY; ZIMMERMAN, JOHN
ENV PROGRESS, AUG 85, V4, N3, P212(5)

JOURNAL ARTICLE: ON APRIL 3, 1983, A TANKER CAR IN A SWITCHING YARD IN DENVER, CO, WAS ACCIDENTALLY PUNCTURED AND 55 CU M OF A 99% SOLUTION OF NITRIC ACID WERE SPILLED. THE RESULTING VAPOR CLOUD OF POTENTIALLY TOXIC NITROGEN DIOXIDE FORCED THE EVACUATION OF NEARLY 5000 RESIDENTS. REPRESENTATIVES FROM NUMEROUS GOVERNMENTAL AGENCIES RESPONDED, INCLUDING THE COLORADO DEPT. OF HEALTH. RESPONSE TEAMS NEUTRALIZED THE SPILL WITH SODA ASH WHILE AIR MONITORING WAS UNDERWAY. FOLLOW-UP MITIGATIVE MEASURES INVOLVED GROUND AND SURFACE WATER SAMPLING AND SOIL DECONTAMINATION.

DESCRIPTORS: *NITRIC ACID; *CHEMICAL SPILLS; *DENVER; *CONTAMINATION INCIDENTS; *SOIL CONTAMINATION; *ENV ACTION; STATE LOCAL; *GROUNDWATER DECONTAMINATION; VAPORS, TOXIC
REVIEW CLASSIFICATION: 02
(ENV)

1001388 DATABASE: NNI File 111
Chemical emergency voluntary procedures set by industry group.
* Wall Street Journal p41(W) p46(E) March 26 1985
CODEN: WSJOAF
col 2 006 col in.
EDITION: Tue
SIC CODE: 2800

DESCRIPTORS: Chemical Manufacturers Association--safety measures; chemical industries--safety measures
(NNI)

1514238 E.I. Monthly No: EI8508067183
CHEMICAL SPILL RESPONSE INFORMATION SYSTEM OF THE ASSOCIATION OF AMERICAN RAILROADS.
Meier, G. E.
Assoc of American Railroads, Washington, DC, USA
Transp Res Rec 977 1984 p 31-38
CODEN: TRREDM ISSN: 0361-1981
Language: ENGLISH
Document Type: JA; (Journal Article)
Treatment: A; (Applications); G; (General Review); M; (Management Aspects)

The Association of American Railroads has undertaken a program to bridge the gap between first response and longer-term environmental cleanup. Two information systems have been developed and targeted at two basic levels of spill response. The Emergency Action Guides are intended for the first responder. These are printed commodity-specific pamphlets designed to assist those who are first on the scene until chemical or technical assistance can be obtained. To support chemical or technical decisions, a computerized system, the Industrial Chemical Accident Response Information System (ICARIS), was developed and integrated with a series of environmental and mathematical models to allow real-time assessment of chemical release problems. The design considerations inherent in both systems promote the evaluation of the long-term consequences associated with emergency spill response activities. 2 refs.

Descriptors: *HAZARDOUS MATERIALS—*Transportation; ENVIRONMENTAL PROTECTION—Accident Prevention; ENVIRONMENTAL ENGINEERING—Handbooks

Identifiers: FIRST RESPONSE ACTION GUIDES; LONG-TERM CLEAN-UP; MATERIAL SPECIFIC GUIDEBOOKS

Classification Codes: 433 (Railroad Transportation); 901 (Engineering Profession); 914 (Safety Engineering); 902 (Engineering Graphics & Standards) 43 (TRANSPORTATION); 90 (GENERAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)

(COM)

0213066 EIM8406-044896

CHEMICAL SPILL RESPONSE TRAINING FOR SUPERVISORS AND HANDLERS.

Oberholtzer, George; Acuff, James T.
Natl Spill Control Sch, Corpus Christi, Tex, USA
Conference Title: Proceedings of the 1st Annual Hazardous Materials Management Conference.
Conference Location: Philadelphia, Pa, USA
Conference Date: 1983 Jul 12-14
Sponsor: Pollution Engineering Magazine
Source: Publ by Tower Conference Management Co, Wheaton, Ill, USA p 237-240 1983
E.I. Conference No.: 04277
Language: English

Descriptors: *CHEMICAL INDUSTRY--*Personnel Training
Identifiers: INFORMATION REQUIRED; RESPONSIBILITY; CHEMICAL HANDLING; MANAGEMENT; TASK ORIENTED WORKERS; LEGAL; POLITICAL
Classification Codes: 802 (Chemical Apparatus & Plants); 912 (Industrial Engineering & Management); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

* TITLE: **Chemsafe: a manual of the chemical industry scheme for assistance in freight industries**
SOURCE: Chemical Industries Association, 1976
(LC)

******** THIS ENTRY ALSO APPEARS IN SECTION II-B ********

0180195 *85-029368
CONSIDERATIONS FOR THE DEVELOPMENT OF A HAZARDOUS CHEMICAL PERSONNEL PROTECTION SYSTEM
STULL JEFFREY O.
USCG, DC,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P293(31)

CONF PAPER: USCG AND OTHER AGENCIES ARE ATTEMPTING TO IMPLEMENT COMPREHENSIVE PROGRAMS WHICH EXAMINE ALL LEVELS OF PROTECTIVE CLOTHING FOR PERSONNEL INVOLVED IN THE MANAGEMENT AND CLEANUP OF HAZARDOUS CHEMICALS. SUIT MATERIAL COMPATIBILITY AND TYPES OF CHEMICAL INTRUSION ARE CONSIDERED; LIMITATIONS OF CURRENT DATA CONCERNING COMPATIBILITY AND MATERIAL DEGRADATION, PENETRATION, AND PERMEATION ARE IDENTIFIED. MATERIALS TESTING PROGRAMS, ENCAPSULATED SUIT DESIGNS, AND CHEMICAL CLOTHING SELECTION GUIDELINES ARE BEING DEVELOPED, (3 DIAGRAMS, 1 GRAPH, 19 REFERENCES, 16 TABLES.)

DESCRIPTORS: *HEALTH SAFETY, OCCUPATIONAL; *CHEMICAL RESIDUES; *PROTECTIVE CLOTHING ; *PERMEABILITY ; DECONTAMINATION; CHEMICAL SPILLS
REVIEW CLASSIFICATION: 02
(ENV)

133355 W79-03248

Contingency Plan for Control and Treatment of Accidental Spills of Toxic Chemicals from Electroplating Processes

Raby, R. A.
Army Materiel Command, Texarkana, TX.

Available from the National Technical Information Service, Springfield, VA 22161 as AD-A009 197, Price codes: A03 in paper copy, A01 in microfiche.
Final Report No. USAMC-ITC-02-08-75-216, March 1975. 45 p, 3 fig, 1 tab, 11 ref, 1 append.,
Journal Announcement: SWRA1207

Methods for treating spills of three types of electroplating process solutions are evaluated. Results of experiments using ferrous sulphate and sodium metabisulphate to treat hexavalent chrome verify their effectiveness. Treatment of cyanides by catalytic oxidation and alkaline chlorination yielded satisfactory results. Acids were neutralized with hydrated lime, soda ash, and caustic soda. A contingency plan for the electroplating shop at Red River Army Depot in Texarkana, Texas, to detect and treat spills is presented; a general discussion of this shop is included. (Davison-IPA)

Descriptors: *Spills ; *Waste treatment ; *Water pollution control; Toxicity ; Industrial wastes ; Liquid wastes ; Water pollution treatment ; Neutralization ; Oxidation ; Chemical reactions ; Cyanide ; Acids ; Red River Army Depot ; Texarkana ; Texas

Section Heading Codes: 5G (Water Quality Management and Protection—Water Quality Control)

(WAT)

TITLE: Control of hazardous material spills: proceedings of the 1974 Conference on Control of Hazardous Material Spills, August 25-28, 1974, San Francisco, California

SOURCE: New York, American Institute of Chemical Engineers, 1974
(LC)

0107293 *75-007153
CONTROL OF OIL AND OTHER HAZARDOUS MATERIALS
HYLAND, JOHN R.
EPA OFFICE OF WATER PROGRAM OPERATIONS, CINCINNATI,
NTIS REPORT PB-238 096, JUN 74 (183)
(ENV)

******** SEE SECTION II-E-1 FOR MORE DETAIL ********

0180197 *85-029373
DETERMINATION OF BURN RATE AND SOOT FORMATION DURING COMBUSTION OF SOLVENTS COMMONLY CARRIED BY RAIL
DELUMYEA R.; MOORE KATHY P.; DUKES SANDRA A.; MILLER GEORGE I.;
MORGAN M. A.; METER GERALD
CLEMSON UNIV,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P114(16)

CONF PAPER: SOLVENTS SPILLED BY RAIL ACCIDENTS ARE USUALLY ALLOWED TO BURN THEMSELVES OUT. TWO PIECES OF DATA REQUIRED TO EVALUATE THIS OPTION ARE PRODUCTS OF COMBUSTION AND MATERIAL BURN RATE. TWO SETS OF EXPERIMENTS WERE CONDUCTED TO OBTAIN NECESSARY DATA ON COMBUSTION PROPERTIES OF SOLVENTS AND THE EFFECTS OF CONDITIONS SURROUNDING THE BURN. CALORIMETER STUDIES WERE PERFORMED TO DETERMINE EFFECTS OF OXYGEN AVAILABILITY ON HEATS OF COMBUSTION AND AMOUNTS OF SOOT PRODUCED. A COMBUSTION CHAMBER WAS USED TO PERMIT CONTROL OF BURN CONDITIONS. (1 DIAGRAM, 5 REFERENCES, 6 TABLES,)

DESCRIPTORS: *FLAMMABILITY; *SOLVENTS; *RAIL TRANSPORTATION;
*CHEMICAL SPILLS; HYDROCARBON OXIDATION; TRANSPORTATION ACCIDENTS
REVIEW CLASSIFICATION: 02
(ENV)

0302023 EIM8506-033703
DEVELOPMENT OF AN APPROACH TO DETERMINE THE CONTENTS OF A SEVERELY CORRODED CHLORINE TANK CAR.
Forrest, Robert G.; Perez, Dana Ryan
US EPA, Region VI, Dallas, TX, USA
Conference Title: 1984 Hazardous Material Spills Conference Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA Conference Date: 1984 Apr 9-12

Sponsor: Assoc of American Railroads, Bur of Explosives, Washington, DC, USA; Chemical Manufacturers Assoc, Washington, DC, USA; US Coast Guard, Washington, DC, USA; EPA, Washington, DC, USA
Source: Publ by Government Inst Inc, Rockville, MD, USA p 33-37 1984
ISBN: 0-86587-064-0
E.I. Conference No.: 05911
Language: English

At a former chemical manufacturing plant site in a populated area of Houston, Texas, a corroded chlorine railroad tank car presented a serious potential public health threat. The insulated railroad tank car was placed on concrete supports in 1970 to serve as a facility storage tank. The presence of chlorine had to be assumed, and valves and associated piping and platform of the dome were so severely corroded as to preclude standard approaches to investigation. A conservative approach to safely determine the tank's contents and to remove any chlorine was developed. Provision was made for control of chlorine releases, and the need for long-term evacuation of the public was avoided. Development and implementation of this approach are discussed. The tank car was found to be empty. 2 refs.

Descriptors: *RAILROAD ROLLING STOCK—*Corrosion; ACCIDENT PREVENTION; CHLORINE; CHEMICAL PLANTS; ENVIRONMENTAL PROTECTION; X-RAY ANALYSIS

Identifiers: CHEMICAL MANUFACTURING SITE; WASTE OIL RECYCLING; INSULATED RAILROAD TANK CAR; COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA); SUPERFUND; CHLORINE EMERGENCY RESPONSE PLAN (CHLOREP)

Classification Codes: 682 (Railroad Rolling Stock); 914 (Safety Engineering); 804 (Chemical Products); 802 (Chemical Apparatus & Plants) 901 (Engineering Profession); 801 (Chemical Analysis & Physical Chemistry) 68 (RAILROAD ENGINEERING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING); 90 (GENERAL ENGINEERING)

(EEM)

EMERGENCIES AND THE EPA

SELL THOMAS C. ; DORRIER STEPHEN
(EPA ENV. RESPONSE TEAM, OHIO) AND
(EPA ENV. RESPONSE TEAM, EDISON,N.J.)

* EPA J, JUN 81, V7, N6, P30 (3)

TECHNICAL FEATURE: BECAUSE ACCIDENTAL RELEASE OF HAZARDOUS SUBSTANCES INTO THE ENVIRONMENT REQUIRES IMMEDIATE ATTENTION, EPA HAS ESTABLISHED RESPONSE TEAMS TO DEAL WITH POSSIBLE DISASTERS. HAZARDS MUST BE RECOGNIZED; CONTAINING METHODS UTILIZED; AND THE PERSONNEL PROTECTED. THE ENVIRONMENTAL RESPONSE TEAMS PROVIDE CHEMICAL MONITORING AT WASTE SITES, LOCAL OFFICIAL ASSISTANCE, AND RELEVANT BACKGROUND INFORMATION. THE NATIONAL CONTINGENCY PLAN, PREPARED TO HANDLE OIL SPILLS AND CHEMICAL EMERGENCIES, IS CURRENTLY BEING REVISED TO PROVIDE ADDITIONAL HELP FOR THE RESPONSE TEAMS. (1 DRAWING, 2 PHOTOS)

DESCRIPTORS: *EMERGENCY PLANNING; *OIL SPILLS; *CHEMICAL SPILLS;
*EPA, FEDERAL; *INFORMATION, ENV; *DISPOSAL METHODS;
ODORS; LABELING
REVIEW CLASSIFICATION: 02
(ENV)

0182072 *86-040670
EMERGENCY RESPONSE AND SPILL CONTROL,
NEWTON, JAMES J. AZS CORP, GA,
* POLLUTION ENGINEERING, AUG 85, V17, N8, P39(5)

JOURNAL ARTICLE: CHEMICAL SPILL RESPONSE IS DIVIDED INTO FOUR DISTINCT PHASES: SPILL PREVENTION, CONTAINMENT, CLEANUP AND RECOVERY, AND DISPOSAL. SPILL PREVENTION APPLIES TO ALL TYPES OF SPILLS AND IS DESCRIBED AS THE FIRST AND SIMPLEST APPROACH TO SPILL CONTROL. A SOUND PREVENTION PROGRAM SHOULD INCLUDE SEVERAL ELEMENTS, SUCH AS DESIGN, INSPECTION, MAINTENANCE, TRAINING, AND PLANNING. THE MOST CRITICAL RESPONSE ACTION TO BE TAKEN IS TO LEARN WHAT CHEMICAL HAS SPILLED AND TO DEPLOY THE CORRECT RESPONSE TECHNIQUES. THE USE OF PROTECTIVE CLOTHING AND METHODS AVAILABLE FOR SPILL CONTAINMENT ARE HIGHLIGHTED.
(ENV)

******** SEE SECTION II-A FOR MORE DETAIL ********

0281938 EIM8503-013618
EMERGENCY RESPONSE ATMOSPHERIC DISPERSION AND ASSESSMENT SYSTEM.
Roffman, Amiram; Chandler, Martin W.; Murawski, S. A.
Energy Impact Associates, Pittsburgh, PA, USA
Conference Title: Proceedings - 77th APCA Annual Meeting.
Conference Location: San Francisco, CA, USA Conference Date: 1984 Jun 24-29
Sponsor: APCA, Pittsburgh, PA, USA
Source: Proceedings, Annual Meeting - Air Pollution Control Association 77th v 1. Publ by APCA, Pittsburgh, PA, USA 84-14. 9, 15p 1984
CODEN: PRAPAP ISSN: 0099-4081
E.I. Conference No.: 06065
Language: English
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0156104 *82-001951
EMERGENCY SPILLS RESEARCH STRATEGY 1980-1984
EPA REPORT EPA-600/9-80-063, DEC 80 (20)

SPECIAL REPORT: RESULTS OF EPA MUNICIPAL WASTEWATER AND SPILL PREVENTION RESEARCH COMMITTEE'S PLANNING EFFORTS FOR EMERGENCY SPILLS RESEARCH AND DEVELOPMENT ARE PRESENTED. RESEARCH FOCUSES ON PREVENTION AND CONTROL OF OIL AND HAZARDOUS SUBSTANCE SPILLAGE. THE RESPONSIBILITY OF RISK ASSESSMENT AND INCINERATION AT SEA R&D PROGRAM WAS ALLOCATED TO THE SOLID WASTE COMMITTEE. THE EMERGENCY SPILLS R&D PROGRAM INTENDS TO DISSEMINATE TECHNICAL INFORMATION PREVENTING THE RELEASE OF OIL AND HAZARDOUS SUBSTANCES INTO THE ENVIRONMENT AND TO DIMINISH THEIR ENVIRONMENTAL EFFECTS. R&D OBJECTIVES UNDER THE OIL AND HAZARDOUS SUBSTANCES SPILLS AREAS INCLUDE: DEVELOPMENT, EVALUATION, AND DEMONSTRATION OF NEW AND IMPROVED EQUIPMENT FOR PREVENTION, IDENTIFICATION, CONTROL, AND REMOVAL OF HAZARDOUS SUBSTANCES AND OIL RELEASED IN THE ENVIRONMENT. METHODOLOGY FOR MOLLIFYING THE EFFECTS OF SUCH RELEASES ARE IDENTIFIED.

DESCRIPTORS: *EMERGENCY PLANNING; *OIL SPILL CLEANUP; *WATER POLLUTION EFFECTS; *OIL SPILL PREVENTION; *CHEMICAL SPILLS; *TECHNOLOGY PLANNING LITERATURE SURVEYS; HAZARDOUS WASTE DISPOSAL ; WATER POLLUTION EQUIPMENT; CLEAN WATER RESTORE ACT 72
REVIEW CLASSIFICATION: 19
(ENV)

0175112 *85-001244

ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: AMMONIUM PHOSPHATES

ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84, (69)

A DETAILED MANUAL ON AMMONIUM PHOSPHATE SPILLS DEPICTS APPROPRIATE COUNTERMEASURES AND ASSESSES THEIR ENVIRONMENTAL IMPACT. PHYSICAL PROPERTY DATA, ENVIRONMENTAL CONCERNS, AND OTHER SUMMARY DATA ON DIAMMONIUM AND MONOAMMONIUM PHOSPHATE ARE PROVIDED; ALSO COVERED ARE COMMERCE AND PRODUCTION, HANDLING AND COMPATIBILITY, CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, AND HUMAN HEALTH. (5 DIAGRAMS, 14 GRAPHS, NUREFERENCE, 5 TABLES.)

DESCRIPTORS: *CHEMICAL SPILLS; *AMMONIA; *PHOSPHATES; *CHEMICAL TRANSPORT; *HEALTH, ENV; *MONITORING, ENV-CHEMICAL; *RAIL TRANSPORTATION *TANKER OPERATION; DECONTAMINATION; CANADA

REVIEW CLASSIFICATION: 02
(ENV)

0175111 *85-001243

ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: BENZENE

ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84, (116)

A DETAILED MANUAL ON BENZENE SPILLS DEPICTS APPROPRIATE COUNTERMEASURES AND ASSESSES THEIR ENVIRONMENTAL IMPACT. PHYSICAL PROPERTY DATA, ENVIRONMENTAL CONCERNS, AND OTHER SUMMARY DATA ON BENZENE ARE PROVIDED; ALSO COVERED ARE COMMERCE AND PRODUCTION, HANDLING AND COMPATIBILITY, CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, AND HUMAN HEALTH. (NUMEROUS DIAGRAMS, GRAPHS, REFERENCES, TABLES)

DESCRIPTORS: *CHEMICAL SPILLS; *BENZENE; *CHEMICAL TRANSPORT; *HEALTH,ENV; *MONITORING, ENV-CHEMICAL; *RAIL TRANSPORTATION ; *TANKER OPERATION; DECONTAMINATION; CANADA

REVIEW CLASSIFICATION: 02
(ENV)

0177075 *85-010490

ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS, CHLORINE

ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84 (131)

CHEMICAL AND PHYSICAL DATA CONCERNING CHLORINE ARE PRESENTED TO AID IN DESIGNING COUNTERMEASURES FOR ACCIDENTAL SPILLS AND RELEASES. PRODUCTION, USE, AND MATERIAL HANDLING OF CL IN CANADA ARE REVIEWED. LEAK NOMOGRAMS, VAPOR DISPERSION NOMOGRAMS, BEHAVIOR IN WATER, AND OTHER ASPECTS OF CONTAMINANT TRANSPORT ARE DISCUSSED. FIRE CONCERNS AND COUNTERMEASURES FOR SPILLS ON LAND AND WATER ARE DETAILED. FRESHWATER, SALTWATER, AND MAMMALIAN TOXICOLOGY DATA ARE ALSO INCLUDED. (NUMEROUS GRAPHS, REFERENCES, TABLES)

DESCRIPTORS: *CHLORINE; *CHEMICAL SPILLS; *DECONTAMINATION; *ATMOSPHERIC DIFFUSION ; *AQUATIC ECOSYSTEMS; CANADA; MAXIMUM PERMISSIBLE EXPOSURE

REVIEW CLASSIFICATION: 02

(ENV)

0175107 *85-001239

ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: SULPHURIC ACID AND OLEUM

ENV CANADA ENV PROTECTION SERVICE REPORT, FEB 84, (141)

A DETAILED MANUAL ON SULFURIC ACID AND OLEUM SPILLS DEPICTS APPROPRIATE COUNTERMEASURES AND ASSESSES THEIR ENVIRONMENTAL IMPACT. PHYSICAL PROPERTY DATA, ENVIRONMENTAL CONCERNS, AND OTHER SUMMARY DATA ARE PROVIDED; ALSO COVERED ARE COMMERCE AND PRODUCTION, HANDLING AND COMPATIBILITY, CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, AND HUMAN HEALTH. (NUMEROUS DIAGRAMS, GRAPHS, REFERENCES, TABLES)

DESCRIPTORS: *CHEMICAL SPILLS; *SULFURIC ACID; *CHEMICAL TRANSPORT; *HEALTH,ENV; *MONITORING, ENV-CHEMICAL; *RAIL TRANSPORTATION; *TANKER OPERATION; DECONTAMINATION; CANADA

REVIEW CLASSIFICATION: 02

(ENV)

0175110 *85-001242

ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS: TOLUENE

ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 84, (113)

NON US GOVT REPORT: A DETAILED MANUAL ON TOLUENE SPILLS DEPICTS APPROPRIATE COUNTERMEASURES AND ASSESSES THEIR ENVIRONMENTAL IMPACT. PHYSICAL PROPERTY DATA, ENVIRONMENTAL CONCERNS, AND OTHER SUMMARY DATA ON TOLUENE ARE PROVIDED; ALSO COVERED ARE COMMERCE AND PRODUCTION, HANDLING AND COMPATIBILITY, CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, AND HUMAN HEALTH. (NUMEROUS DIAGRAMS, GRAPHS, REFERENCES, TABLES)

DESCRIPTORS: *TOLUENE; *CHEMICAL SPILLS; *CHEMICAL TRANSPORT; *HEALTH,ENV; *MONITORING, ENV-CHEMICAL; *RAIL TRANSPORTATION; *TANKER OPERATION; DECONTAMINATION; CANADA

REVIEW CLASSIFICATION: 02

(ENV)

0177054 *85-010134

ETHYLENE

ENV CANADA ENV PROTECTION SERVICE REPORT, AUG 84 (65)

DATA FOR IMPLEMENTING COUNTERMEASURES IN THE EVENT OF ETHYLENE SPILLS AND ACCIDENTAL RELEASES ARE PRESENTED. PHYSICAL AND CHEMICAL DATA RELEVANT TO THE COMPOUND ARE SUMMARIZED; PRODUCTION AND MAJOR USES OF ETHYLENE IN CANADA ARE SURVEYED. CONTAMINANT TRANSPORT IS DISCUSSED IN TERMS OF DISPERSION IN AIR AND DIFFUSION IN WATER. TOXICITY TO AQUATIC BIOTA AND TERRESTRIAL PLANTS IS COVERED, AS ARE RECOMMENDED EXPOSURE LIMITS FOR HUMAN HEALTH. CLEANUP AND TREATMENT OPTIONS ARE DELINEATED FOR SPILLS ON LAND AND WATER. (NUMEROUS REFERENCES, TABLES)

DESCRIPTORS: *ETHYLENE; *CHEMICAL SPILLS; *DECONTAMINATION; *VAPORIZATION; *ATMOSPHERIC DIFFUSION; *MATHEMATIC MODELS-CHEMICAL; CHEMICAL STORAGE; CANADA ; MAXIMUM PERMISSIBLE EXPOSURE

REVIEW CLASSIFICATION: 02

(ENV)

0177053 *85-010132
ETHYLENE DICHLORIDE
ENV CANADA ENV PROTECTION SERVICE REPORT, JUN 84 (121)

INFORMATION IS COMPILED TO AID IN THE CLEANUP OF ETHYLENE DICHLORIDE SPILLS AND ACCIDENTAL RELEASES. PHYSICAL AND CHEMICAL DATA PERTAINING TO THE COMPOUND ARE COVERED; PRODUCTION AND USE OF ETHYLENE DICHLORIDE IN CANADA IS DISCUSSED. CONTAMINANT TRANSPORT CONSIDERATIONS ARE EMPHASIZED; VAPOR DISPERSION NOMOGRAMS AND SAMPLE CALCULATIONS FOR DIFFUSION IN RIVERS ARE EXPLAINED. TOXICITY AND BIODEGRADATION PROPERTIES ARE SUMMARIZED, AS ARE COUNTERMEASURES FOR SPILLS ON LAND AND WATER. (NUMEROUS DIAGRAMS, REFERENCES, TABLES)

DESCRIPTORS: *ETHYLENE; *CHLORIDES; *CHEMICAL SPILLS;
*DECONTAMINATION;*ATMOSPHERIC DIFFUSION;
*VAPORIZATION; MATHEMATIC MODELS-CHEMICAL;
CANADA ; CHEMICAL STORAGE ; MAXIMUM PERMISSIBLE EXPOSURE
REVIEW CLASSIFICATION: 02
(ENV)

0178212 *85-016403
ETHYLENE DICHLORIDE/ETHYLENE GLYCOL SPILL IN A MAJOR WATER RESOURCE IN BRITISH COLUMBIA
CHRISTIAN KENNETH L. ; MOOREHEAD WILLIAM P.
J ENV HEALTH, JAN-FEB 85, V47, N4, P192(5)

JOURNAL ARTICLE: IN MARCH 1982, A CANADIAN NAT'L RAILWAY TRAIN CARRYING HAZARDOUS CHEMICALS DERAILED NEAR BLUE RIVER IN BRITISH COLUMBIA. SIGNIFICANT QUANTITIES OF ETHYLENE DICHLORIDE AND ETHYLENE GLYCOL WERE RELEASED INTO THE NORTH THOMPSON RIVER, A MAJOR WATER SUPPLY SOURCE IN THE PROVINCE. THE LOCAL PUBLIC HEALTH AUTHORITY'S ROLE IN RESPONSE TO THE SPILL IS DISCUSSED AS IT RELATES TO THE POTENTIAL THREAT TO DOMESTIC WATER SUPPLIES. (15 REFERENCES, 4 TABLES,)

DESCRIPTORS: *BRITISH COLUMBIA; *CHEMICAL SPILLS; *RIVERS; *WATER,
DRINKING; *ETHYLENE; *ENV ACTION-NON U S;
*MONITORING, ENV-WATER; CONTAMINATION INCIDENTS
REVIEW CLASSIFICATION: 02
(ENV)

0377252 EIM8604-023857

FUZZY BASED EXPERT SYSTEM FOR ANALYSIS OF ACCIDENTS.

Vaija, P.; Jarvelainen, M.; Dohnal, M.
Helsinki Univ of Technology, Lab of Chemical Engineering, Helsinki, Finl

Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Sponsor: Inst of Chemical Engineers, North Western Branch, UK; Safety & Reliability Soc
Source: Institution of Chemical Engineers Symposium Series n 93. Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 397-412 1985
CODEN: ICESDB ISSN: 0307-0492
ISBN: 0-85295-189-2
E.I. Conference No.: 07832
Language: English

Basic principles in creating fuzzy based expert systems for problems dealing with subjective, ill-defined and uncertain knowledge are discussed. These principles are applied in a simple test system which is built up for accident analysis. The test system is based on an actual record set of former accidents. (Author abstract) 21 refs.

Descriptors: *ACCIDENTS--*Computer Aided Analysis; ACCIDENT PREVENTION--Computer Simulation; HAZARDOUS MATERIALS--Accidents; CHEMICALS--Safe Handling; ARTIFICIAL INTELLIGENCE--Expert Systems; MATHEMATICAL TECHNIQUES--Fuzzy Sets
Identifiers: INTELLIGENT INTERFACE; DATA BANKS; FUZZY SIMULATION
Classification Codes: 914 (Safety Engineering); 723 (Computer Software) 921 (Applied Mathematics); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 91 (ENGINEERING MANAGEMENT); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 80 (CHEMICAL ENGINEERING)
(EEM)

0177052 *85-010130

HAZARDOUS MATERIALS RESPONSE GUIDE

ILLINOIS ENV PROTECTION AGENCY REPORT, 1984 (49)
(ENV)

****** SEE SECTION II-C FOR MORE DETAIL ******

0180193 *85-029366

HEALTH AND SAFETY AND TRAINING FOR HAZARDOUS MATERIALS RESPONSE PERSONNEL

MATHEMEL MARTIN S. ; CRAWFORD GEORGE M.; WESTON ROY F.

ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P278(8)

CONF PAPER: A BASIC HEALTH AND SAFETY PROGRAM AIMED AT TRAINING FIELD PERSONNEL INVOLVED IN CHEMICAL SPILL PREVENTION AND EMERGENCY RESPONSE IS OUTLINED. MEDICAL SURVEILLANCE PROTOCOLS CERTIFY PERSONNEL FIT TO PERFORM HAZARDOUS MATERIALS FIELD WORK, AND PROVIDE MEDICAL BASELINE DATA AGAINST WHICH TO MEASURE ADVERSE IMPACTS OF WORKING WITH SUCH MATERIALS. TRAINING PROGRAM ELEMENTS INCLUDE A REMEDIAL RESPONSE HEALTH AND SAFETY TRAINING COURSE, HAZARD RECOGNITION AND EVALUATION, AND EXPOSURE GUIDELINES.

DESCRIPTORS: *HEALTH SAFETY, OCCUPATIONAL; *CHEMICAL SPILLS; *EDUCATION, ENV; *PROTECTIVE CLOTHING; *MONITORING, ENV-BIOLOGICAL; DECONTAMINATION; CHEMICAL STANDARDS

REVIEW CLASSIFICATION: 02

(ENV)

0179741 *85-025698

HYDROGEN SULPHIDE: ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS

ENV CANADA ENV PROTECTION SERVICE REPORT, JUL 84 (122)

COMPREHENSIVE INFORMATION ON HYDROGEN SULFIDE IS COMPILED FOR USE BY SPILL SPECIALISTS IN DESIGNING COUNTERMEASURES FOR SPILLS AND TO ASSESS THEIR ENVIRONMENTAL EFFECTS. PHYSICAL AND CHEMICAL DATA, COMMERCE AND PRODUCTION, MATERIAL HANDLING AND COMPATIBILITY, AND CONTAMINANT TRANSPORT ARE EXPLAINED. ENVIRONMENTAL DATA FOR H2S COVER AQUATIC AND TERRESTRIAL TOXICITY, CHEMICAL AND BIOLOGICAL DEGRADATION, AND HUMAN HEALTH INFORMATION. COUNTERMEASURES ARE DETAILED IN TERMS OF FIRE CONCERNS, SPILLS ON LAND OR WATER, CLEANUP, TREATMENT, AND DISPOSAL. (NUMEROUS GRAPHS, REFERENCES, TABLES)

DESCRIPTORS: *HYDROGEN SULFIDE; *CHEMICAL SPILLS; *FLAMMABILITY; *DECONTAMINATION; *ATMOSPHERIC DIFFUSION; CANADA; AQUATIC ECOSYSTEMS

REVIEW CLASSIFICATION: 02

(ENV)

AN CA104(12):94492c
TI **ICARIS (AAR's Industrial Chemical Accident Response Information System)**
AU Meier, G. E.
CS Assoc. Am. Railroads
LO Washington, DC, USA
SO Proc. Tech. Semin. Chem. Spills, 2nd, 172-83.
Environ. Prot. Serv.: Ottawa, Ont.
SC 59-2 (Air Pollution and Industrial Hygiene)
SX 19, 61
DT C
CO 54GDAU
PY 1985
LA Eng

AB To bridge the gap between emergency responses to and longer-term environmental cleanup of chem. spills, the assocn. of American Railroads developed ICARIS, which contains data consisting of 180 descriptive entries per commodity, grouped in 24 major categories; general information (synonyms, trade space names, etc.), chem. information (including 35 data elements describing the chem. properties of each chem.) health and hazard information (including response guidelines, health hazards, and protective clothing), and environmental effects information (52 data elements including toxicity, pollution effects, and interreaction data); at present, 134 commodities have been completed representing >98% of the railroad chem. traffic.

KW safety chem spill railroad computer; chem spill railroad information system; computer system chem spill railroad
IT Environmental pollution
(by chem. spills, on railroad lines, prevention of, computerized information system for)
IT Accidents
(chem. spills, on railroad lines, emergency response to and long-term cleanup of, computerized information system for)
IT Chemicals
(spills, on railroad lines, emergency response to and long-term cleanup of, computerized information system for)
IT Information science
(system, computerized, for emergency response to and long-term cleanup of chem. spills on railroad lines)
(CAS)

0161985 *83-000840
MARINE TRANSPORT AND HANDLING OF DANGEROUS SUBSTANCES
WARDELMANN E. H.
IMCO
PRESENTED AT OECD CONTROL OF CHEMICALS IN IMPORTING
COUNTRIES SYM, YUGOSLAVIA, APR 22-25, 81, P172 (13)
(ENV)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0171790 *84-003699
MODIFICATION OF SPILL FACTORS AFFECTING AIR POLLUTION: AN EVALUATION OF COOLING AS A VAPOR MITIGATION PROCEDURE FOR SPILLED VOLATILE CHEMICALS
GREER, J. S. ; GROSS S. S.; MCGOFF M. J.; HILTZ R. H.
MSA RESEARCH CORP, PA,
EPA REPORT 600/S2-81-214, OCT 81, V1, (5)

JOURNAL ARTICLE: VAPORS RELEASED BY CHEMICAL SPILLS POSE HAZARDS TO LIFE AND PROPERTY DOWNWIND OF THE SPILL SITE. AMONG THE VAPOR AMELIORATION TECHNIQUES BEING CONSIDERED IS THE USE OF A COOLANT TO LOWER THE TEMPERATURE OF A SPILL AND REDUCE ITS EQUILIBRIUM VAPOR PRESSURE. THE FEASIBILITY OF USING FOUR DIFFERENT COOLANTS WAS EXAMINED: WATER ICE, DRY ICE, LIQUID CARBON DIOXIDE, AND LIQUID NITROGEN. LABORATORY AND LIMITED SCALE-UP STUDIES ESTABLISHED DRY ICE AS THE MOST VERSATILE COOLANT OPTION. DRY ICE AVOIDS THE PROBLEMS OF DENSE CLOUD FORMATION AND LARGE QUANTITY REQUIREMENTS ASSOCIATED WITH LIQUID N AND CO2. (1 GRAPH, 1 TABLE)

DESCRIPTORS: *CHEMICAL SPILLS; *VAPORIZATION; *COOLING SYSTEMS; *ATMOSPHERIC TEMPERATURE; *NITROGEN; *CARBON DIOXIDE; LIQUEFACTION
REVIEW CLASSIFICATION: 02
(ENV)

95067095 CA: 95(8)67095q CONFERENCE PROCEEDING
Monitoring a chlorine spill
AUTHOR(S): Lane, D. A.; Thomson, B. A.
LOCATION: SCIEX INC., Thornhill, ON, Can., L3T 1P2
JOURNAL: Proc. Int. Tech. Conf. Toxic Air Contam.
EDITOR: McGovern, John J (Ed)
DATE: 1981 PAGES: 141-55

CODEN: 45QNA4
LANGUAGE: English
MEETING DATE: 80
PUBLISHER: APCA, Pittsburgh, Pa
SECTION: CA059002 Air Pollution and Industrial Hygiene
IDENTIFIERS: chlorine spill air pollution monitoring

DESCRIPTORS:Air pollution...by chlorine spill, in Canada, monitoring of
CAS REGISTRY NUMBERS: 532-27-4 air pollution by, from chlorine spill, in Canada
7782-50-5 biological studies, air pollution by spill of, in Canada, monitoring of
(CA)

0173171 *84-005080
NEW TECHNIQUES IN CHEMICAL SPILL CONTROL
BANNISTER, WILLIAM W. ; DOUGLAS CRAIG D.; CURBY WILLIAM A.;
NDI KINGSLEY B.; KAN DAVID L.; WALSH STEVEN P.; DALTON WILLIAM J.
UNIV OF LOWELL,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, OCT 25-27, 83, P75 (18)

CONF PAPER: COUNTERACTIVE MEASURES DEPLOYED IN THE EVENT OF HAZARDOUS MATERIALS TRANSPORT ACCIDENTS ARE DEFINED IN TERMS OF DETECTION, SURVEILLANCE, CONTROL, AND RECOVERY. THE POTENTIAL FOR ENHANCEMENT OF THESE ELEMENTS BY USE OF FLUORESCENT AGENTS, SONIC SENSING, AND CHEMICAL AGENTS CAPABLE OF PRODUCING HEATS OF HYDRATION TO PROMOTE THERMAL INFRARED SENSING IS INVESTIGATED. RECENT RESEARCH ADDRESSING THESE PROCESSES IS SURVEYED, WITH EMPHASIS ON OIL AND CHEMICAL SPILLS. THE DEVICES CONSIDERED ARE APPLICABLE TO SPILL DETECTION AND CONTROL IN MARINE AND FRESHWATERS AS WELL AS ON LAND. (5 DIAGRAMS, 7 GRAPHS, 1 MAP, 4 PHOTOS, 18 REFERENCES, 5 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS; *CHEMICAL CONTAM CONTROL;
*DECONTAMINATION; *REMOTE SENSING, ULTRAVIOLET;
*FLUORESCENCE ; *REMOTE SENSING, INFRARED; OIL
SPILL CLEANUP ; WATER POLLUTION EQUIPMENT ; SONAR
REVIEW CLASSIFICATION: 02
(ENV)

0108332 *75-008175
OIL SPILLS AND SPILLS OF HAZARDOUS SUBSTANCES
EPA REPORT, MAR 3, 75 (33)

SPECIAL REPORT: THE PRIMARY OBJECTIVE OF EPA'S OIL AND HAZARDOUS SUBSTANCE SPILL PROGRAM IS TO PROTECT WATER QUALITY THROUGH SPILL PREVENTION AND TO MINIMIZE THE ENVIRONMENTAL IMPACT OF SPILLS. SOME OF THE MORE SIGNIFICANT SPILL INCIDENTS AND THE MECHANISMS, BOTH MANAGERIAL AND TECHNOLOGICAL, TO DEAL WITH THEM ARE DESCRIBED. THE WIDESPREAD ECOLOGICALLY DAMAGING EFFECTS OF OIL AND HAZARDOUS SUBSTANCE SPILLS ARE CONSIDERED. A TECHNOLOGICAL ASSISTANCE DATA SYSTEM THAT WILL ALLOW QUICKER RESPONSES TO SPILLS IS EXAMINED. SPILL SURVEILLANCE, DETECTION, REPORTING, AND TRACKING TECHNIQUES THAT WILL BE USEFUL IN LEGAL PROCEEDINGS AND ENFORCEMENT ACTIONS ARE DISCUSSED. REMOTE SENSING IS THE MOST EFFICIENT MEANS AVAILABLE FOR SPILL SURVEILLANCE. INTERNATIONAL COOPERATION IS NECESSARY FOR SUCCESSFULLY CONTROLLING AND PREVENTING MARINE POLLUTION FROM OPERATIONAL AND ACCIDENTAL DISCHARGES OF OIL AND HAZARDOUS SUBSTANCES. (2 DIAGRAMS, 1 DRAWING, 1 MAP, 55 PHOTOS)

DESCRIPTORS: *OIL SPILLS; *CHEMICAL SPILLS; *OIL SPILL ANALYSIS; *OIL SPILL DETECTION; *OIL SPILL CLEANUP; *OIL SPILL PREVENTION; *OIL SPILL INCIDENTS; *INFORMATION SYSTEMS, ENV; REMOTE SENSING; LAW ENFORCEMENT, ENV-FED; AERIAL SURVEILLANCE; OIL TANKERS; SUPERTANKERS; POLYCHLORINATED BIPHENYLS
REVIEW CLASSIFICATION: 19
(ENV)

0158399 *82-004154
ORNL'S QUICK RESPONSE TEAM: ANALYTICAL CHEMISTS ON CALL
KRAUSE CAROLYN
ORNL REVIEW, WINTER 82, V15, N1, P1 (11)

TECHNICAL FEATURE: WHEN AN ACCIDENTAL SPILL OCCURS, ORNL DETECTS WHAT SPILLED AND WHERE IT CAME FROM AND FINDS OUT HOW TO STOP THE SPILL. JUST HOW THESE TASKS ARE PERFORMED DEPENDS ON THE NATURE OF THE SPILL AND CAN INVOLVE MUCH DETECTIVE WORK. RADIOACTIVITY IN ENVIRONMENTAL SAMPLES IS DETECTED AND THE METHODS USED IN OIL CHARACTERIZATION ARE OUTLINED.

DESCRIPTORS: *CHEMICAL SPILLS; *CHEMICAL CONTAM CONTROL; *U S OAK RIDGE NATL LAB; *OIL SPILL CLEANUP; *RADIATION PROTECTION; MEASUREMENTS & SENSING
REVIEW CLASSIFICATION: 02
(ENV)

0173176 *84-005085
PRACTICAL APPLICATIONS OF CONVENTIONAL AERIAL PHOTOGRAPHY TO HAZARDOUS WASTE SPILL EVALUATION
COOK DAVID K.
ECOLOGY & ENV INC, NY,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, OCT 25-27, 83, P203 (9)

CONF PAPER: THE APPLICATIONS OF CONVENTIONAL AERIAL PHOTOGRAPHY TO CHEMICAL SPILL EVALUATION ARE DISCUSSED. ALTHOUGH VARIOUS REMOTE SENSING TECHNOLOGIES ARE AVAILABLE FOR THIS PURPOSE, CONVENTIONAL PHOTOGRAPHY IS MORE EASILY ACCESSIBLE AND LESS EXPENSIVE. MAPPING, VERTICAL WIDE-ANGLE, OBLIQUE ANGLE, AND VIDEO IMAGERY PHOTOGRAPHY ARE SURVEYED. THESE APPROACHES CAN BE USED IN SPILL STUDIES TO ACQUIRE DIVERSE DATA CONCERNING BASE MAPS, SURFACE DRAINAGE PATTERNS, SURFICIAL DEPOSITS, BEDROCK TYPE, LAND USE, VEGETATION COVER, AND POPULATION DENSITY. (12 REFERENCES)

DESCRIPTORS: *CHEMICAL SPILLS; *AERIAL SURVEILLANCE; *REMOTE SENSING, INFRARED; *DRAINAGE; *LAND USE CLASSIFICATION; POPULATION DENSITY
REVIEW CLASSIFICATION: 02
(ENV)

0103158 75-003107
PROMPT DETECTION AND TRACING OF OILS AND OTHER DETRIMENTAL CHEMICALS IN THE ENVIRONMENT,
JELTES R.
TNO, NETHERLANDS,
* WATER RESEARCH, NOV 74, V8, N11, P977 (11)

SURVEY REPORT THE ESTABLISHMENT OF RELATIVELY SMALL ENVIRONMENTAL FIRST-AID LABORATORIES ON A WORLDWIDE REGIONAL BASIS IS SUGGESTED TO ALLOW QUICK RESPONSE TO SPILLS OF OIL AND OTHER CHEMICALS. THE ACTIVITIES OF THE LABORATORIES WOULD COVER QUALITATIVE AND QUANTITATIVE DETERMINATIONS. ANALYTICAL METHODS USEFUL FOR CHEMICAL ''FIRST-AID'' ARE DESCRIBED. (6 GRAPHS, 33 REFERENCES, 5 TABLES)

DESCRIPTORS: *OIL SPILL DETECTION ; *OIL SPILL ANALYSIS ; *OIL SPILL PREVENTION ; *FLAME IONIZATION ; *CHROMATOGRAPHY, GAS ; *SPECTROPHOTOMETRY ; *ATOMIC ABSORPTION
REVIEW CLASSIFICATION: 12
(ENV)

0131069 EIM8308-057924
RESPONSE MEASURES FOR CHEMICAL SPILLAGE.
Cormack, D.
Dep of Trade, Marine Pollution Control Unit, London, Engl
Conference Title: Conference Papers - MariChem 82,
4th International Conference and Exhibition on the Marine
Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Amsterdam, Neth
Conference Date: 1982 Jun 22-24
Source: MariChem 82.
Publ by Gastech Ltd, Rickmansworth, Hertfordshire,
Engl Sess 3, Pap 2, 9p 1982
CODEN: MARID8
E.I. Conference No.: 01857
Language: English

Descriptors: *WATER POLLUTION--*Oil Spills
Identifiers: POTENTIAL SPILLAGES; CHEMICAL PARCEL TANKERS; DISPERSION AND EVAPORATION; REMOTE SENSING TECHNIQUES; SLICK TRACKING PRODUCED BY CHEMICALS; STANDARD OIL SPILL RESPONSE TECHNIQUES; PUMPING OR DREDGING TECHNIQUES; HAZARD LEVEL ASSESSMENT; MONITORING OF SITUATION; ATMOSPHERIC DILUTION MODELS; PREDICTION OF CONCENTRATIONS IN AIR AND SEA
Classification Codes: 453 (Water Pollution); 45 (POLLUTION & SANITARY ENGINEERING)
(EEM)

AN CA104(16):135111y
TI **Response to chemical emergencies**
AU Hushon, Judith M.
CS Comput. Syst. Div., Bolt Beranek and Newman
LO Arlington, VA 22209, USA
SO**Environ. Sci. Technol., 20(2), 118-21
SC 59-0 (Air Pollution and Industrial Hygiene)
DT J
CO ESTHAG
IS 0013-936X
PY 1986
LA Eng

AB A review with 25 refs. on the development and use of expert systems, i.e., computerized problem-solving systems, for furnishing help to 1st responders (police, firefighters, etc.) in chem. spills and similar chem. emergencies.

KW review chem emergency expert system; computer system chem spill review; safety chem emergency response review
IT Accidents; (chem. spills and releases, emergency response to, computerized expert systems for support of)
IT Safety; (in chem. transportation, computerized expert systems for emergency response support in relation to)
IT Transportation; (of chems., spills and accidental releases in, emergency response to, computerized expert systems for support of)
IT Chemicals; (spills and accidental releases of, emergency response to, computerized expert systems for support of)
IT Information science; (system, computerized, for emergency response support in chem.spills and accidental releases)
(CAS)

143724 CH
Response to oil and chemical marine pollution.
Cormack, D.
Appl. Sci. Publishers Ltd.
Barking, U.K., Appl.Sci.Publishers Ltd., 1983, 555p.
(ISBN 0-85334-182-6), 0-85334-182-6
Languages: English

This book covers the following topics: pollution effects and appropriate response, factors affecting the oil after spillage at sea and the implications for oil spill response, techniques for oil spill response at sea, oil spill response techniques for use in inshore waters and beaches, operational discharges of oil to the marine environment, pollution arising from the marine transportation of chemicals, rational contingency planning and the structure of counter-pollution organisations. (T.R.A.)
Section Heading Codes: C7
(FLU)

0302071 EIM8506-033751
ROLE OF A PHYSICIAN AT A HAZARDOUS MATERIAL RELEASE.
Edelman, Philip
Univ of California, Irvine Medical Cent,
Regional Poison Control Cent, Orange, CA, USA
Conference Title: 1984 Hazardous Material Spills
Conference Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA
Conference Date: 1984 Apr 9-12
Sponsor: Assoc of American Railroads, Bur of Explosives, Washington, DC, USA; Chemical Manufacturers Assoc, Washington, DC, USA; US Coast Guard, Washington, DC, USA; EPA, Washington, DC, USA
Source: Publ by Government Inst Inc, Rockville, MD, USA
p 369-372 1984
ISBN: 0-86587-064-0
E.I. Conference No.: 05911
Language: English

Medical response to chemical spills should not be solely for the purpose of treating acute injuries. The physician at the scene of a chemical spill should be prepared to institute the beginnings of an epidemiologic survey for that incident. It is essential to determine the characteristics of the exposure, any unique situations which may affect that exposure and the immediate signs and symptoms of the victims. A well documented and thorough history is essential. In many situations it is necessary to define index cases for study and follow-up.

Descriptors: HAZARDOUS MATERIALS--*Environmental Impact; ACCIDENT PREVENTION; HEALTH CARE--Epidemiology
Identifiers: MEDICAL RESPONSE; PRE-HOSPITAL CARE; RESPONDING AGENCY PERSONNEL; SUBSEQUENT HEALTH PROBLEMS; TOXIDROMES
Classification Codes: 901 (Engineering Profession); 914 (Safety Engineering); 461 (Biotechnology); 90 (GENERAL ENGINEERING); 91 (ENGINEERING MANAGEMENT); 46 (BIOENGINEERING)
(EEM)

0174210 *84-006119
ROUTINE SHIPMENTS OF ESSENTIAL GOODS ARE FREIGHTED WITH SPECIAL RISKS
MACFADYEN J. T.
* SMITHSONIAN, APR 84, V15, N1, P44 (10)
(ENV)

****** SEE SECTION II-B FOR MORE DETAIL ******

TITLE: **Seveso: lessons from an escape**
SOURCE: Economist, v. 267, June 17, 1978, pp. 101-102, 104-106, 108
(LC)

0085719 NIOSH-00002443
Stream Pollution by Chemical Spills from Common Carriers
Gillenwater, L. E.
* Journal of the American Water Works Association, Vol. 57, pages 201-207, 4 references Febuary 1965

Report of shipping of toxic organic chemicals by common carrier via highway, water, and rail, outlining safety measures should a toxic material enter a stream above a public water supply. The Interstate Commerce Commission (ICC) regulations and classifications have emphasis on explosive and flammable materials. Case histories of 14 chemical spills mention the following substances: ethylene cyanohydrin, dioctyl phthalate, ethyl acrylate, methanol, benzene, acetic anhydride, oil, epichlorohydrin, carbon tetrachloride, and butoxy triglycol. Directives include a spill alert system with notification of appropriate authorities and labeling on packaging and shipping papers as to toxicity of contents.

DESCRIPTORS: Acrylates; Alcohols; Anhydrides; Benzenes; Ethylenes; Glycols; Labeling; Oil; Pollution; Spills; Water pollution; 56235; 6756; 71432; 106898; 108247; 109784; 117840; 140885; 143226
(OSH)

TITLE: **Study of detection, identification and quantification techniques for spills of hazardous chemicals.**
SOURCE: Washington, Office of Research and Development, U.S. Coast Guard, 1976
AUTHOR: Sandness, G.A.; Washburn, J.F.; Ailes, S.B.
(LC)

1024301 C83014682

TAKING THE STING OUT OF CHEMICALS

VOUSDEN, L.

MICRO DECIS. (GB) NO.16 80-6 FEB. 1983

CODEN: MIDEDG ISSN: 0261-5142

Treatment: GENERAL,REVIEW

Document Type: JOURNAL PAPER

Languages: ENGLISH

DESCRIBES HOW MICROCOMPUTERS ARE HELPING FIREMEN DEAL WITH DANGEROUS CHEMICALS. BECAUSE CHEMICALS ARE SO VOLATILE, A SPEEDY AND ACCURATE RESPONSE TO ANY ACCIDENT IS ESSENTIAL, AND TO ACHIEVE THIS A NUMBER OF FIRE BRIGADES ARE USING A COMPUTER-BASED SYSTEM CALLED CHEMDATA. THE SYSTEM WAS DEVELOPED BY THE NATIONAL CHEMICAL EMERGENCY CENTRE (NCEC) AT THE NATIONAL ATOMIC ENERGY RESEARCH CENTRE IN HARWELL, OXFORDSHIRE, WITH ASSISTANCE FROM THE CHEMICAL INDUSTRIES ASSOCIATION AND VARIOUS CHEMICAL FIRMS. IT CONSISTS OF A DATABANK OF INFORMATION ON HAZARDOUS CHEMICALS, AND INFORMATION RETRIEVAL SOFTWARE.

Descriptors: INFORMATION RETRIEVAL SYSTEMS; ACCIDENTS

Identifiers: MICROCOMPUTERS; FIREMEN; CHEMICALS; ACCIDENT; FIRE BRIGADES CHEMDATA; NATIONAL CHEMICAL EMERGENCY CENTRE; NCEC; NATIONAL ATOMIC ENERGY RESEARCH CENTRE; CHEMICAL INDUSTRIES ASSOCIATION; DATABANK; INFORMATION RETRIEVAL SOFTWARE

Class Codes: C7250L; C7890

(INS)

0160313 *82-005997

TECHNIQUES FOR HANDLING LANDBORNE SPILLS OF VOLATILE HAZARDOUS SUBSTANCES

BROWN, D. ; CRAIG R.; EDWARDS M.; HENDERSON N.; THOMAS T. J.

BATTELLE COLUMBUS LABS, OH,

NTIS REPORT PB82-105230, SEP 81 (101)

SPECIAL REPORT: THE RESPONSE NEEDS OF TEAMS THAT HANDLE SPILLS OF HAZARDOUS VOLATILE MATERIALS ON LAND INCLUDE HARDWARE ITEMS ADAPTED FOR ENHANCED SPILL RESPONSE CAPABILITIES, PHYSICAL/CHEMICAL MECHANISMS FOR USE IN CONTROLLING HAZARDS ARISING FROM VOLATILITY, AND OTHER TECHNIQUES THAT RAISE HAZARDOUS VOLATILE SPILL CONTROL RESPONSES. SPILL SCENARIOS THAT COMPARE NEW SUGGESTED TECHNOLOGY ITEMS WITH PRESENT RESPONSE PROCEDURES ARE REPORTED.

DESCRIPTORS: *CHEMICAL SPILLS; *HAZARDOUS WASTE TREATMENT; *VOLATILITY; *WASTE DISPOSAL, LAND ; *EMERGENCY PLANNING
REVIEW CLASSIFICATION: 17
(ENV)

1210804
Teleconferenceson chemical accidents.
* Chemical & Engineering News June 24, 1985 p. 19
(PRO)

******** SEESECTION II-D FOR MORE DETAIL ********

1086109 C83028352
TRACKING AND DIFFUSING THE CHEMICAL TIME BOMB
(FIRE SERVICE)
VOUSDEN, L.
COMPUTING (GB) VOL.11, NO.16 36-7 21 APRIL 1983
CODEN: CPTGB5
(INS)

******** SEESECTION I-A FOR MORE DETAIL ********

0041220 EIM8209-032835
U.S. COAST GUARD'S APPROACH TO THE CHEMISTRY REQUIREMENTS FOR HAZARDOUS CHEMICAL SPILLS.
Bentz, Alan P.; Kleinberg, Gerd A.
US Coast Guard, Res & Dev Cent, Groton, Conn, USA
Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA
Conference Date: 1980 May 13-15
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA
p 185-191 1980
E.I. Conference No.: 00199
(EEM)

******** SEE SECTION VI FOR MORE DETAIL ********

0173174 *84-005083
U.S. EPA,ERT'S INITIAL AIR MONITORING GUIDES FORCHEMICAL SPILLS
TURPIN RODNEY D.
EPA, NJ,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, OCT 25-27, 83, P181 (7)

CONF PAPER: AIR MONITORING GUIDES USED BY THE EPA ENVIRONMENTAL RESPONSE TEAM FOR THE INITIAL MONITORING/CLASSIFICATION OF AMBIENT OR WORKPLACE AIR CONDITIONS DURING AN ACCIDENTAL CHEMICAL RELEASE ARE DESCRIBED. THE FIVE-STEP FIELD PROCEDURE EMPHASIZES USE OF PORTABLE PHOTOIONIZATION AND FLAME IONIZATION DETECTORS. BACKGROUND CONCENTRATIONS OF ATMOSPHERIC CONTAMINANTS ARE FIRST MEASURED, FOLLOWED BY ON-SITE CONCENTRATION DETERMINATION. ON-SITE AREA SAMPLES ARE THEN COLLECTED AND SPECIFIC CONTAMINANTS ARE IDENTIFIED. THE LAST STEP ENTAILS IDENTIFICATION OF PARTICULATE CONTAMINANTS. (2 TABLES)

DESCRIPTORS: *MONITORING, ENV-AIR; *CHEMICAL SPILLS; *EPA, FEDERAL; *HEALTH SAFETY, OCCUPATIONAL; *AIR POLLUTION INSTRUMENTS; AIR SAMPLING; PARTICULATES
REVIEW CLASSIFICATION: 02
(ENV)

0313566 EIM8508-045246
USE OF WATER SPRAY BARRIERS TO DISPERSE SPILLS OF HEAVY GASES.
Moodie, K.
Health & Safety Executive, Explosion & Flame Lab, Buxton, Engl
Conference Title: 1985 Spring National Meeting and Petro Expo '85 - American Institute of Chemical Engineers.
Conference Location: Houston, TX, USA
Conference Date: 1985 Mar 24-28
Sponsor: AIChE, New York, NY, USA
Source: American Institute of Chemical Engineers, National Meeting 1985 Spring. Publ by AIChE, New York, NY, USA Pap 60a, 21p 1985
CODEN: ACENC9
E.I. Conference No.: 06737
Language: English

This paper describes an experimental investigation carried out to establish the performance characteristics of full-scale water spray barriers when dispersing accidental spills of heavy gases. Approximately one hundred trials were conducted in which the influences of various parameters on the overall performance of a barrier were investigated, particularly the spray nozzle characteristics and the orientation of the barrier. Carbon dioxide was used as a representative heavy gas with source strengths of 2 and 4. 2 kg/s. The average wind speeds were 1-4 m/s during the majority of the trials. It is confirmed that the specific momentum flow rate of the spray barrier is a significant factor in determining its overall performance. 19 refs.

Descriptors: *GASES--*Accident Prevention; WATER; NOZZLES; CARBON DIOXIDE; HAZARDOUS MATERIALS; VAPORS
Identifiers: SPECIFIC MOMENTUM FLOW RATE; WATER SPRAY BARRIER; WATER SPRAY NOZZLES; ELECTRO-CHEMICAL CELL SENSOR
Classification Codes: 931 (Applied Physics); 914 (Safety Engineering); 444 (Water Resources); 619 (Pipes, Tanks & Accessories); 631 (Fluid Flow & Hydrodynamics); 804 (Chemical Products) 93 (ENGINEERING PHYSICS); 91 (ENGINEERING MANAGEMENT); 44 (WATER & WATERWORKS ENGINEERING); 61 (PLANT & POWER ENGINEERING); 63 (FLUID DYNAMICS & VACUUM TECHNOLOGY); 80 (CHEMICAL ENGINEERING)
(EEM)

0137159 79-004396
WATER-1977 (SAFETY ASPECTS OF TOXIC AND HAZARDOUS SPILLS)
WOOD WILLIAM S.
WILLIAM S. WOOD & ASSOC. PA,
AICHE SYM SERIES 178, 1978, V74, N178, P11 (3)

SURVEY REPORT: ACCIDENTAL CHEMICAL SPILLS AND RELEASES CREATE THE POTENTIAL FOR FIRES, EXPLOSIONS, TOXIC EXPOSURES, AND CORROSIVE EFFECTS. HOWEVER, DAMAGE TO PROPERTY AND INJURY TO EMPLOYEES AND EMERGENCY RESPONSE PERSONNEL CAN BE MINIMIZED BY ADEQUATE PLANNING. CASE HISTORIES OF ACCIDENTS RESULTING FROM POOR DESIGN, INADEQUATE MAINTENANCE, AND INEPT OPERATION ARE CITED. MANY ACCIDENTAL RELEASES OCCUR IN PROCURING, MINING, AND ESPECIALLY IN TRANSPORTING TOXIC AND HAZARDOUS CHEMICALS. METHODS OF MONITORING THESE ACCIDENTS TO PROVIDE IMMEDIATE RESPONSE AND TO MINIMIZE THE DAMAGING EFFECTS ARE DISCUSSED.

DESCRIPTORS: *CHEMICAL SPILLS ; *HEALTH SAFETY, OCCUPATIONAL;
*EMERGENCY PLANNING; *TRANSPORTATION SAFETY ;
*CHEMICAL TRANSPORT; *FLAMMABILITY; EXPLOSIONS;
HAZARDOUS WASTES
REVIEW CLASSIFICATION: 02
(ENV)

III. MITIGATION

B. EQUIPMENT:

1094114 DE84004061/XAB
BAGI: A New Concept for Detecting and Tracking Hazardous Gases
McRae, T. G.
Lawrence Livermore National Lab., CA.
Corp. Source Codes: 068147000; 9513035
Sponsor: Department of Energy, Washington, DC.
Report No.: UCRL-89459; CONF-840475-2
Oct 83 31p
Hazardous material spills conference, Nashville, TN, USA, 9 Apr 1984.
Languages: English Document Type: Conference proceeding
NTIS Prices: PC A03/MF A01 Journal Announcement: GRAI8502; NSA0900
Country of Publication: United States
Contract No.: W-7405-ENG-48

A new concept for the detection and tracking of toxic or flammable gases resulting from accidental spills or leaks is presented. The Backscatter Absorption Gas Imaging (BAGI) technique is based on the optical radiation augmentation of the field of view of an imaging device by laser radiation corresponding to an absorption line of the gas species to be detected. The technique also requires that there be a reflective or scattering background in the field of view and that the laser wavelength correspond to an atmospheric window. Several schematic representations of possible BAGI systems, along with some minimum detectable gas concentrations and laser combinations, are presented. In addition, a list of about 20 toxic and flammable materials which show a high probability of absorption of carbon dioxide (CO sub 2) laser radiation are included. The BAGI system performance parameters of laser power, image system spectral bandwidth, terrain reflectivity, and range are discussed. The laser power requirements are greatly reduced by synchronizing the unexpanded laser beam with the raster-like, scanning field of view of the flying-spot imager. It is estimated that a production-grade BAGI system will cost about $50K per unit. An example of the range and detection sensitivity for the BAGI methane gas detection system are presented and discussed. (ERA citation 09:010336)

Descriptors: *Natural Gas; Air Pollution; Gas Spills; Laser Spectroscopy Quantitative Chemical Analysis
Identifiers: ERDA/400104; ERDA/030500; NTISDE
Section Headings: 7D (Chemistry--Physical Chemistry); 68A (Environmental Pollution and Control--Air Pollution and Control); 99A (Chemistry--Analytical Chemistry)
(NTIS)

0168123 *84-000081
BE PREPARED-HAZARDOUS MATERIAL SPILLS
BARTLEY RANDELL L.
US ARMY, W GERMANY,
* POLLUTION ENGINEERING, FEB 83, V15, N2, P30 (4)

INITIAL PHASE PROCEDURES FOR INCIDENTS INVOLVING HAZARDOUS MATERIALS SPILLAGE ARE DESCRIBED. FAMILIARITY WITH SELECTION, USES AND LIMITATIONS OF RESPIRATORY PROTECTION APPARATUS, PROTECTIVE CLOTHING, SITE ENTRY, CONTROL, DECONTAMINATION PROCEDURES, FIELD INSTRUMENTS AND EQUIPMENT, AND RESPONSE ORGANIZATION AND MANAGEMENT IS IMPORTANT IN DEALING WITH SUCH INCIDENTS. RESPONSE ACTIVITY NECESSITATES THE NEED TO ADEQUATELY DEFINE, ADDRESS, AND MITIGATE THE PROBLEM THROUGH RECOGNITION, EVALUATION, AND CONTROL PROCEDURES. DEALING WITH RADIATION AND UNKNOWN HAZARDS IS HIGHLIGHTED. (8 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS; *CHEMICAL STANDARDS; *HEALTH SAFETY, OCCUPATIONAL; *RADIATION, ATOMIC-DOSES; *PROTECTIVE CLOTHING; PACKAGING; RADIATION INSTRUMENTS
REVIEW CLASSIFICATION: 02
(ENV)

1141989 AD-A156 038/2/XAB
Chemical Protective Suit Environmental Protection Agency
Iacono, V.; Fratantuono, J.; Martone, R.; Aliberte, E. E.
Army Natick Research and Development Center, MA.
Corp. Source Codes: 081119000; 392674
Report No.: NATICK/TR-81/009
Nov 78 86p
Languages: English
NTIS Prices: PC A05/MF A01
Journal Announcement: GRAI8521
Country of Publication: United States

Development of a modular hazardous environmental protective ensemble, for Environmental Protection Agency Personnel involved in the clean up of hazardous materials spills. It contains all the components necessary to isolate the user form a toxic environment. It's modular design provides the user the option to select different combinations of components in the ensemble to best accomplish his mission tasks over a climatic range of -17.8C (-0.04 F to 100.4 F). Body cooling, needed for operating in hot environments is accomplished by the use of a modular liquid-cooled cap/vest.

Descriptors: *Protective clothing; Aerosols; Body temperature; Breathing apparatus; Carbon dioxide; Environmental protection; Hazardous materials; Health; Heat balance; High temperature; Modular construction; Oxygen; Respiration; Spilling; Toxicity; Toxic agents; Cleaning; Industrial hygiene; Human factors engineering
Identifiers: *Hazardous materials spills; Chemical spills; NTISDODXA
Section Headings: 6Q (Biological and Medical Sciences--Protective Equipment); 95D (Biomedical Technology and Human Factors Engineering--Human Factors Engineering); 68C (Environmental Pollution and Control--Solid Wastes Pollution and Control)
(NTIS)

TITLE: Development of a kit for detecting hazardous material
SOURCE: Cincinnati, Ohio Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency (Available from NTIS), 1978
EPA 600/2-78-055
(LC)

0180200 *85-029381
DEVELOPMENT OF A PERSON-PORTABLE ANALYTICAL SYSTEM
UNDERDOWN ALAN W.
UNDERDOWN CHEMOMETRICS LTD, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P344(16)

CONF PAPER: PERSON-PORTABLE DETECTORS BASED ON ELECTRONIC DETECTORS FOR MONITORING CHEMICALS IN AIR, WATER, AND SOIL IN THE VICINITY OF CHEMICAL SPILLS ARE EVALUATED. CALIBRATION AND DEVELOPMENT OF THREE INSTRUMENTS ARE DISCUSSED. RESEARCH HAS FOCUSED ON THE OVA 128, A PORTABLE FLAME IONIZATION DETECTOR FOR AIR SAMPLING; THE HNU PI-101, A PORTABLE PHOTOIONIZATION DETECTOR FOR CONTINUOUS AIR SAMPLING; AND THE HACH DR-EL/4, A RANGE OF METERS USED TO ANALYZE INORGANIC CHEMICALS IN WATER. (1 DIAGRAM, 7 GRAPHS, 5 REFERENCES, 3 TABLES,)

DESCRIPTORS: *CHEMICAL RESIDUES; *AIR POLLUTION INSTRUMENTS; *WATER POLLUTION INSTRUMENTS; *CHEMICAL SPILLS; AIR ANALYSIS
REVIEW CLASSIFICATION: 02
(ENV)

0180202 *85-029385

DEVELOPMENT OF A VEHICLE-PORTABLE ANALYTICAL SYSTEM FOR CHEMICAL EMERGENCIES,

BOBRA A. M.

ENV CANADA,

ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P367(5)

CONF PAPER DEVELOPMENT WORK IN CANADA FOCUSING ON VEHICLE-PORTABLE SYSTEMS BASED ON COMPUTER-CONTROLLED INSTRUMENTS FOR MONITORING SUBSTANCES IN AIR, WATER, AND SOIL AT CHEMICAL SPILL SITES IS DESCRIBED. THREE MICROPROCESSOR-BASED SYSTEMS WERE SELECTED FOR EVALUATION IN SUCH SYSTEMS: GAS CHROMATOGRAPHY, INFRARED SPECTROSCOPY, AND ULTRAVIOLET AND VISIBLE SPECTROSCOPY. FEATURES AND CAPABILITIES OF PROTOTYPE INSTRUMENTS ARE SUMMARIZED. (2 REFERENCES,)

DESCRIPTORS: *CHEMICAL SPILLS ; *MEASUREMENT & SENSING ; *CHROMATOGRAPHY, GAS ; *SPECTROSCOPY ; *INFRARED SENSING ; *COMPUTER APPLICATIONS ; AIR ANALYSIS ; WATER ANALYSIS ; SOIL ANALYSIS

REVIEW CLASSIFICATION: 02

(ENV)

0302054 EIM8506-033734

DEVELOPMENT OF IMPROVED COUNTERMEASURES FOR CHEMICAL SPILLS IN CANADA.

Fingas, Mervin F.

Environment Canada, Environmental Emergencies Technology Div, Ottawa, Ont, Can

Conference Title: 1984 Hazardous Material Spills Conference Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.

Conference Location: Nashville, TN, USA Conference Date: 1984 Apr 9-12

Sponsor: Assoc of American Railroads, Bur of Explosives, Washington, DC, USA; Chemical Manufacturers Assoc, Washington, DC, USA; US Coast Guard, Washington, DC, USA; EPA, Washington, DC, USA

Source: Publ by Government Inst Inc, Rockville, MD, USA p 255-260 1984

ISBN: 0-86587-064-0

E.I. Conference No.: 05911

Language: English

Descriptors: *WATER POLLUTION--*Chemical Analysis; SOIL POLLUTION--Chemical Analysis; AIR POLLUTION--Chemical Analysis; CHEMICALS--Environmental Impact; CHROMATOGRAPHIC ANALYSIS; SPECTROSCOPIC ANALYSIS

Identifiers: TECHNICAL INFORMATION FOR PROBLEM SPILLS; POCKET-PORTABLE SYSTEM; HNU UNIT; OVA UNIT; CHEMICAL HAZARD EMERGENCY COUNTERMEASURES PROGRAM

Classification Codes: 453 (Water Pollution); 803 (Chemical Agents & Basic Industrial Chemicals); 451 (Air Pollution); 801 (Chemical Analysis & Physical Chemistry); 483 (Soil Mechanics & Foundations); 804 (Chemical Products) 45 (POLLUTION & SANITARY ENGINEERING); 80 (CHEMICAL ENGINEERING); 48 (ENGINEERING GEOLOGY)

(EEM)

82-06993

Early Warning System for Toxic Waste Spills

* CHEM. ENG VOL. 89, NO. 15, p. 35,
Publ.Yr: 1982
Languages: ENGLISH

Do you know where accidental releases of volatile dangerous chemicals from your plant may be headed? With these real-time monitors you can not only track the direction of the cloud, but also sound the alarm.

Descriptors: chemical pollutants; toxic materials; safety systems; environmental protection; occupational safety

(POL)

0163444 *83-002249

EMERGENCIES INVOLVING HAZARDOUS MATERIAL SPILLS CONTAINMENT AND CLEAN-UP TECHNIQUES

WALKER JAMES S.
O H MATERIALS CO, VA,
PRESENTED AT FERTILIZER INST ENV SYM, SAN ANTONIO,
MAR 8-10, 82, P143 (18)

TECHNICAL FEATURE: IMMEDIATE CONTAINMENT AND CONTROL OF A SPILLED HAZARDOUS COMMODITY AND THE IMPLEMENTATION OF COST EFFECTIVE CLEAN-UP TECHNIQUES IS ESSENTIAL IN MINIMIZING DAMAGE TO PERSONNEL, PROPERTY, AND THE ENVIRONMENT. THE TYPES OF INFORMATION NECESSARY TO DETERMINE OPTIMAL CONTAINMENT AND CLEAN-UP TECHNIQUES APPLICABLE TO SUCH SPILLS ARE

IDENTIFIED. COMMODITIES INVOLVED MUST BE SPECIFIED, AND SITE-SPECIFIC INFORMATION MUST BE OBTAINED. CONTAINMENT OPTIONS AND EQUIPMENT ARE ALSO DISCUSSED. (12 DIAGRAMS, 2 REFERENCES)

DESCRIPTORS: *CHEMICAL SPILLS; *DECONTAMINATION; *CONTAINMENT; *POLLUTION CONTROL EQUIPMENT; *CHEMICAL RESIDUES; SOIL CONTAMINATION; AIR POLLUTION EQUIPMENT; WATER POLLUTION EQUIPMENT ; CONF PAPER

REVIEW CLASSIFICATION: 02
(ENV)

0325770 EIM8509-057450

EVALUATION OF THE SAFETY OF COMPRESSED OXYGEN SELF-RESCUERS: RESULTS OF DESTRUCTIVE TESTING.

Watson, R. W.; Furno, A. L.; Kovac, J.
US Bur of Mines, Pittsburgh Research Cent, Pittsburgh, PA, USA

Conference Title: 20 International Conference of Safety in Mines Research Institutes.
Conference Location: Sheffield, Engl Conference Date: 1983 Oct 3-7
Sponsor: Health & Safety Executive
Source: Available from Health & Safety Executive, Explosion & Flame Lab, Buxton, Engl J2, 9p 1983
E.I. Conference No.: 05447
Language: English

An evaluation of the potential hazards of three compressed oxygen self-contained self-rescuers (SCSR) designed for use in underground coal mines is reported. The evaluation took place along the lines of a similar investigation of chemical self-rescuers, and involved laboratory experiments as well as trials designed to simulate a mining environment. They included bullet impact, bonfire, feeder breaker impact and feed-through and mining machine runover tests. The work showed that the units were not inherently unsafe but that under certain conditions of extreme abuse they can present a potential ignition or explosion hazard. The recommendations formulated by the Mine Safety and Health Administration (MSHA) state that the units should be either properly worn by the miner, stored in heavy containers or otherwise protected from situations in which the units might be accidentally ruptured or destroyed, such as being runover by mobile mining equipment. 2 refs.

Descriptors: *COAL MINES AND MINING—*Accident Prevention; MINE RESCUE; GAS CYLINDERS; OXYGEN; MINES AND MINING—Accident Prevention; MINING LAWS AND REGULATIONS

Identifiers: SELF-RESCUERS; DEVICE WEIGHT/SIZE; SPECIFICATIONS; OPERATING CHARACTERISTICS; STEEL OXYGEN BOTTLE; PRESSURE-INDICATING GAUGES

Classification Codes: 503 (Mines & Mining, Coal); 914 (Safety Engineering); 619 (Pipes, Tanks & Accessories); 804 (Chemical Products); 902 (Engineering Graphics & Standards); 502 (Mine & Quarry Equipment & Operations) 50 (MINING ENGINEERING); 91 (ENGINEERING MANAGEMENT); 61 (PLANT & POWER ENGINEERING); 80 (CHEMICAL ENGINEERING); 90 (GENERAL ENGINEERING)

(EEM)

0127563 *78-002535

A FAST ALARM SYSTEM TO OPTIMIZE THE PROTECTION OF THE PUBLIC IN THE VICINITY OF A NUCLEAR POWER PLANT

BABOCSAY, L. ; CHAKRABORTY S.; JESCHKI W.; PREIRE S.
EIDGENOSSISCHES AMT FUR ENERGIEWIRTSCHAFT, SWITZERLAND,
PRESENTED AT IAEA/OECD HANDLING OF RADIATION ACCIDENTS SYM,
VIENNA, FEB 28-MAR 4, 77, P315 (10)

SURVEY REPORT: A FAST ALARM SYSTEM FOR PUBLIC PROTECTION IN THE IMMEDIATE NEIGHBORHOOD OF A NUCLEAR POWER PLANT IS PROPOSED AS A SUPPLEMENT TO EXISTING EMERGENCY ORGANIZATION FOR HANDLING NUCLEAR AND CHEMICAL ACCIDENTS IN SWITZERLAND. TECHNICAL FEATURES OF THE SYSTEM ARE DESCRIBED. THE CIVIL DEFENSE ORGANIZATION IN THE COUNTRY HAS A PROGRAM TO BUILD SHELTERS FOR THE WHOLE POPULATION. ENOUGH WILL EXIST FOR THE PUBLIC NEAR NUCLEAR POWER PLANTS. (3 DIAGRAMS, 1 GRAPH)

DESCRIPTORS: *SWITZERLAND; *NUCLEAR ACCIDENTS; *EMERGENCY PLANNING; *NUCLEAR POWER PLANTS; *MONITORING, ENV-RADIATION; OECD CONF PAPER: IAEA CONF PAPER

REVIEW CLASSIFICATION: 14

(ENV)

0163371 *83-002175

HANDLING OF RAIL CHEMICAL SPILL PRAISED

RAWLS REBECCA L.

* CHEMICAL & ENGINEERING NEWS, NOV 1, 82, V60, N44, P28 (3)

(ENV)

****** SEE SECTION II-B FOR MORE DETAILS ******

0159177 *82-004861
A MOBILE STREAM DIVERSION SYSTEM FOR HAZARDOUS MATERIALS SPILLS ISOLATION
ZACCOR JAMES V.
SCIENTIFIC SERVICE, CA,
NTIS REPORT PB82-109679, SEP 81 (48)

SPECIAL REPORT: A PROTOTYPE MOBILE SYSTEM FOR QUICK DIVERSION OF A STREAM FLOW AROUND A CONTAMINATED AREA HAS BEEN DEVELOPED. SPILL SCENARIOS ARE ANALYZED TO ESTABLISH DESIGN CRITERIA FOR A SELF-CONTAINED, INDEPENDENT SYSTEM THAT WOULD MAINTAIN FLOW CONTINUITY AROUND A REGION UNDERGOING DECONTAMREINATION; THE DESIGN USES STOCK ITEMS AVAILABLE NATIONWIDE TO PROVIDE EASY MAINTENANCE AND REPLACEABILITY. THE SYSTEM IS ASSEMBLED ON TWO INDEPENDENT UNITS MOUNTED ON TRAILERS SO THAT SPILLS ARE ACCESSIBLE VIA STATE OR INTERSTATE HIGHWAYS, AND A QUICK UNLOADING FEATURE ENABLES AIR SHIPMENT TO DISTANT LOCATIONS. UNIT OPERATION AND ABILITY TO DELIVER A FLOW RATE OF 90.35 CU M/SECOND A DISTANCE OF 0.3 KM OVER UNPREPARED GROUND ARE EVALUATED IN A SHAKEDOWN TEST.

DESCRIPTORS: *CHEMICAL CONTAM CONTROL ; *CHEMICAL SPILLS ; *STREAMS
REVIEW CLASSIFICATION: 02
(ENV)

0180714 *86-033042
NEW TOXIC-GAS DETECTOR COULD SAVE LIVES, PREVENT DISASTERS
STETTER JOSEPH R.
LOGOS, SUMMER 85, V3, N2, P2(4)

JOURNAL ARTICLE: A PORTABLE DEVICE IS BEING DEVISED AT ANL THAT LETS SCIENTISTS OR FIREMENT QUICKLY AND ACCURATELY DETECT A TOXIC VAPOR IN THE FIELD. THE LIGHTWEIGHT SENSING SYSTEM ALSO ALLOWS IDENTIFICATION OF THE TOXIC GAS AND DETERMINATION OF ITS ATMOSPHERIC CONCENTRATION. THE CHEMICAL PARAMETER SPECTROMETER CAN HELP PROTECT THE HEALTH AND SAFETY OF THOUSANDS WORKING WITH POTENTIALLY HAZARDOUS CHEMICALS OR LIVING NEAR SITES WHERE THEY ARE TRANSPORTED, STORED, OR USED. IN ITS PRESENT FORM, THE INSTRUMENT CAN DETECT AND IDENTIFY 12 HAZARDOUS GASES. FUTURE VERSIONS WILL HANDLE UP TO 100. (1 DIAGRAM, 1 PHOTO,)

DESCRIPTORS: *AIR POLLUTION INSTRUMENTS; *VAPORS, TOXIC;
*CHEMICAL RESIDUES ; CHEMICAL SPILLS
REVIEW CLASSIFICATION: 02
(ENV)

0173175 *84-005084

PERSON-PORTABLE SYSTEMS FOR MULTI-MEDIA ANALYSIS AT CHEMICAL SPILL SITES

LOCKWOOD, J. ; HALMAN R.
FARRINGTON LOCKWOOD CO, OTTAWA
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P189 (14)

CONF PAPER: THE ENVIRONMENT CANADA ENVIRONMENTAL EMERGENCIES TECHNOLOGY DIV. LAUNCHED THE CHEMICAL HAZARD EMERGENCY COUNTERMEASURES PROGRAM IN 1980 TO DEVELOP CHEMICAL SPILLS RESPONSE CAPABILITIES. ANALYTICAL SYSTEMS APPLICABLE TO CHEMICAL DETECTION AND ANALYSIS IN AIR, WATER, AND SOIL WERE DEVELOPED. PORTABLE INSTRUMENTATION IS NOW AVAILABLE FOR ON-SITE SPILL MONITORING AND CHEMICAL CONCENTRATION DETERMINATION. THE OVA 128, A PORTABLE FLAME IONIZATION DETECTOR, AND THE HNU PI-101, A PORTABLE PHOTOIONIZATION DETECTOR, ARE DESCRIBED. (1 GRAPH, 3 PHOTOS, 4 REFERENCES, 3 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS; *MONITORING, ENV-CHEMICAL; *MONITORING, ENV-AIR; *VAPORIZATION; *SOIL CONTAMINATION; WATER ANALYSIS; ORGANIC COMPOUNDS
REVIEW CLASSIFICATION: 02
(ENV)

0289465 EIM8504-021145

PORTABLE MICROPROCESSOR-CONTROLLED INSTRUMENT FOR SENSING, IDENTIFYING, AND MONITORING GASEOUS CHEMICALS

Stetter, J. R.; Zaromb, S.; Penrose, W. R.
Argonne Natl Lab, Energy & Environmental Systems Div, Argonne, IL, USA
Conference Title: Extended Abstracts, Fall Meeting Electrochemical Society.
Conference Location: New Orleans, LA, USA
Conference Date: 1984 Oct 7-12
Sponsor: Electrochemical Soc, Pennington, NJ, USA
Source: Electrochemical Society Extended Abstracts v 84-2. Publ by Electrochemical Soc, Pennington, NJ, USA p 887-888 1984
CODEN: ESABB6 ISSN: 0160-4619
E.I. Conference No.: 05699
Language: English

About 1000 chemical compounds are regularly shipped in quantity on U. S. waters. The U. S. Coast Guard inspects the vessels that carry these chemicals and cleans up chemical spills. To protect U. S. Coast Guard personnel from exposure to hazardous chemicals, the authors are developing a portable detector that responds promptly to many different compounds, identifies the detected compounds, and monitors their concentrations. 2 refs.

Descriptors: *SENSORS--*Applications; CHEMICAL ANALYSIS; AIR POLLUTION
Identifiers: EXTENDED ABSTRACT; CHEMICAL VAPOR MONITORING; SELECTION OF DETECTION METHODS; FIELD TESTING OF PROTOTYPE MONITOR; TOXIC GAS SENSORS
Classification Codes: 801 (Chemical Analysis & Physical Chemistry); 723 (Computer Software); 804 (Chemical Products); 451 (Air Pollution); 80 (CHEMICAL ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 45 (POLLUTION & SANITARY ENGINEERING)

(EEM)

AN CA104(12):94493d
TI **Role of computers in chemical spill response**
AU Mackay, D.
CS Dep. Chem. Eng. Appl. Chem., Univ. Toronto
LO Toronto, ON, Can.
SO Proc. Tech. Semin. Chem. Spills, 2nd, 184-9.
Environ. Prot. Serv.: Ottawa, Ont.
SC 59-2 (Air Pollution and Industrial Hygiene)
SX 19, 35, 60, 61
DT C
CO 54GDAU
PY 1985
LA Eng

AB To illustrate the possible use of computers and data banks in quick responses to chem. spills, a hypothetical scenario is presented in which a tank truck accident results in the spill of an unidentified liq. in a ditch by the side of the highway; the unconscious truck driver is taken to a hospital; the local fire chief arrives with her portable computer, printer, software, and radio; the fire chief uses her computer and radio linkup with the National Spill Response Center (Canada) to identify the spilled material and det. the proper measures to be taken; and needed countermeasures are taken.

KW safety chem spill response computer; chem spill identification response computer
IT Accidents; (chem. spills, identification and response in, potential use of computers in)
IT Computer application;(in chem. spill identification and response)
IT Chemicals; (spills, identification of and response to, potential use of computers in)
IT Information science; (retrieval, computerized, in chem. spill identification and response)
IT 75-01-4, biological studies; (spills of liquefied, identification of and response to, computer and data bank use in hypothetical)
(CAS)

0213036 EIM8406-044866
ROLE OF COMPUTERS IN U. S. COAST GUARD POLLUTION RESPONSE OPERATIONS.
Reiter, Gary A.; Farthing, John W.
US Coast Guard, Washington, DC, USA
Conference Title: Proceedings of the 1st Annual Hazardous Materials Management Conference.
Conference Location: Philadelphia, Pa, USA
Conference Date: 1983 Jul 12-14
Sponsor: Pollution Engineering Magazine
Source: Publ by Tower Conference Management Co, Wheaton, Ill, USA p 52-54 1983
E.I. Conference No.: 04277
Language: English

Descriptors: *WATER POLLUTION—*Computer Aided Analysis
Identifiers: OIL SPILLS; HAZARDOUS CHEMICAL SPILLS; COASTAL WATERS; POLLUTION INCIDENT REPORTING SYSTEM; HAZARD ASSESSMENT; CHEMICAL INFORMATION SYSTEM; SPILL TRAJECTORY MODEL
Classification Codes: 453 (Water Pollution); 723 (Computer Software); 914 (Safety Engineering); 803 (Chemical Agents & Basic Industrial Chemicals); 804 (Chemical Products) 45 (POLLUTION & SANITARY ENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 91 (ENGINEERING MANAGEMENT); 80 (CHEMICAL ENGINEERING)
(EEM)

0173173 *84-005082

SOME OPERATING PROBLEMS ASSOCIATED WITH PERSONAL PROTECTION EQUIPMENT AT SPILL INCIDENTS

VANCHUK J.T.

MSA CANADA INC, ONTARIO,

ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83,P163 (18)

CONF PAPER: EQUIPMENT USED BY EMERGENCY RESPONSE TEAMS IN COMBATING HAZARDOUS MATERIAL OR CHEMICAL SPILLS IS EXAMINED. EMPHASIS IS PLACED ON RESPIRATORY SYSTEM AND SKIN PROTECTION. THE RELIABILITY AND OPERATION OF SELF-CONTAINED BREATHING APPARATUS ARE SURVEYED. THE MERITS AND LIMITATIONS OF WEARING THE APPARATUS INSIDE CHEMICAL SUITS OR EXTERNALLY ARE ADDRESSED AND PRESENTED IN TABULAR FORM. (1 TABLE)

DESCRIPTORS: *CHEMICAL SPILLS; *PROTECTIVE CLOTHING; *DECONTAMINATION *HEALTH SAFETY, OCCUPATIONAL; *AIR FILTERS; *AIR POLLUTION EQUIPMENT

REVIEW CLASSIFICATION: 02

(ENV)

0180188 *85-029361

A STUDY OF VAPOUR SPILL CONTROL TECHNOLOGY

BUIST I. A. ; SOLSBERG L. B.

S. L. ROSS ENV RESEARCH LTD, CANADA,

ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P208(21)

CONF PAPER: AN ENGINEERING ASSESSMENT WAS UNDERTAKEN OF EXISTING TECHNOLOGIES WITH POTENTIAL APPLICABILITY TO CONTROL THE VAPOR OR GAS COMPONENT OF SPILLED CHEMICALS AND LIQUEFIED GASES. PHYSICOCHEMICAL PROPERTIES OF 33 CHEMICALS OF CONCERN WERE COMPILED, AND THE SUITABILITY OF VARIOUS COUNTERMEASURES TO RELEASES WAS EVALUATED. TECHNIQUES FOR ENHANCED DISPERSION, COMBUSTION, CONDENSATION/LIQUEFACTION, COMPRESSION, ABSORPTION, AND ADSORPTION WERE CONSIDERED. LIFTING AND DISPERSING THE VAPOR OR GAS PLUME WAS THE MOST FEASIBLE VAPOR SPILL CONTROL TECHNIQUE. (2 DIAGRAMS, 8 GRAPHS, 6 TABLES,)

DESCRIPTORS: *CHEMICAL SPILLS; *VAPORIZATION; *DECONTAMINATION; *FLAMMABILITY; *ATMOSPHERIC DIFFUSION; *ADSORPTION; COMPRESSION; DIRECT COMBUSTION

REVIEW CLASSIFICATION: 02

(ENV)

0180204 *85-029389

A SURVEY OF COUNTERMEASURES SYSTEMS FOR HAZARDOUS MATERIAL SPILLS

SOLSBERG L. B.
HATFIELD CONSULTANTS LTD, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P391(4)

CONF PAPER: A COMPENDIUM OF CONCEPTUAL, PROTOTYPE, AND COMMERCIALLY AVAILABLE HAZARDOUS MATERIAL SPILL RESPONSE EQUIPMENT WAS PREPARED BY THE ENV. CANADA ENV. PROTECTION SERVICE. THE REFERENCE SOURCE COVERS CONTAINMENT OPTIONS ON LAND AND WATER AS WELL AS VAPOR CONTROL. REMOVAL STRATEGIES, TEMPORARY STORAGE ALTERNATIVES, TRANSFER GUIDELINES, AND ULTIMATE DISPOSAL SCHEMES ARE INCLUDED.

DESCRIPTORS: *CHEMICAL SPILLS; *DECONTAMINATION; *SOIL CONTAMINATION; *WATER POLLUTION EQUIPMENT; *HAZARDOUS WASTE DISPOSAL; CHEMICAL STORAGE
REVIEW CLASSIFICATION: 02
(ENV)

942240

UK: An improved method to contain coal mine explosions is under development by the Health & Safety Executive at its Buxton, England, lab.

Chemistry & Industry August 1, 1983 p. 575

The triggered barrier technique is under test in at least 12 National Coal Board collieries. The barrier consists of a long cylinder containing water and nitrogen (in a separate compartment) at pressure. A nearby sensor detects heat from an approaching explosion, triggering nitrogen release through a fast acting valve, and activating a piston forcing water out radially from the cylinder. Some 227 L of water is ejected within 180 ms. The new system is more expensive than the conventional stone dust barrier, but has advantages in low-ceilinged, fast-moving coal faces, where stone dust barriers are difficult to maintain. HSE is also developing a techniqueto reduce risk of explosions following accidental release of denser-than-air gases at chemical plants. Water is sprayed upwards from a bank of nozzles arranged along the pipeline, causing turbulence and mixing the gas cloud with air.

*4UK *United Kingdom *1100000 *Coal *23 *safety mgmt
(PRO)

AN CA101(14):115914x
TI **U.S. EPA, ERT's initial air monitoring guides for chemical spills**
AU Turpin, Rodney D.
CS Environ. Response Team, Environ. Prot. Agency
LO Edison, NJ, USA
SO Proc. Tech. Semin. Chem. Spills, 1st, 181-7. Environ. Prot. Serv. (Can.): Ottawa, ON.
SC 59-0 (Air Pollution and Industrial Hygiene)
DT C
CO 51ZGAB
PY 1983
LA Eng
AB A review with 1 ref. on the initial air monitoring program of US EPA for an accidental chem. release.
KW chem spill initial air monitoring; monitoring program chem release EPA
IT Air pollution
(monitoring program for, by accidental chem. release, of US EPA)
IT Standards, legal and permissive
(of air initial monitoring, for chem. spills, of US EPA)
IT Accidents
(of chem. spills, initial air monitoring program for, of US EPA)
IT Chemicals
(spills of, initial air monitoring program for, of US EPA)
(CAS)

1172728 DE86001907/XAB
Use of Gas Imaging as an Emergency Response Tool
McRae, T. G.
Lawrence Livermore National Lab., CA.
Corp. Source Codes: 068147000; 9513035
Sponsor: Department of Energy, Washington, DC.
Report No.: UCRL-92482; CONF-8511110-2
Oct 85 9p
JANNAF Safety and Environmental Protection Subcommittee meeting, Monterey, CA, USA, 4 Nov 1985.
Languages: English
Document Type: Conference proceeding
NTIS Prices: PC A02/MF A01
Journal Announcement: GRAI8607; NSA1100
Country of Publication: United States
Contract No.: W-7405-ENG-48

The Backscatter/Absorption Gas Imaging (BAGI) technique is a promising new concept for the location and tracking of hazardous gases. The fundamental principle of the technique is that if hazardous gases were visible to the human eye, it would be easy to locate the source of a leak or, in the case of an accidental spill, to determine the extent and direction of movement of the resulting vapor cloud. The ability to image these gases thus represents a very practical emergency response tool. The BAGI technique offers a simple way to accomplish these goals by integrating an infrared (IR) laser and an IR imaging system. An airborne BAGI system could be used to determine the location of hazardous gas clouds resulting from disabled vessels at sea, train derailments or tanker truck accidents. This real-time capability would provide valuable input for evacuation decisions facing emergency response teams. The BAGI technique shows promise as a long-range detection system capable of quickly locating the sources of hazardous gas and monitoring the dispersion clouds even at very low concentration levels. The system is simple to operate and interpret, and is composed of field-proven instruments which should make commercialization easy. 2 refs., 6 figs., 1 tab. (ERA citation 11:007816)

Descriptors: *Gas Spills; Backscattering; Carbon Dioxide Lasers; Hazardous Materials; Infrared Radiation; Monitoring
Identifiers: ERDA/500200; ERDA/440300; *Chemical analysis; *Infrared spectroscopy; *Air pollution detection; NTISDE
Section Headings: 7D (Chemistry--Physical Chemistry); 68A (Environmental Pollution and Control--Air Pollution and Control); 99A (Chemistry--Analytical Chemistry)
(NTIS)

AN CA104(12):94494e
TI **Vapor spill control technology**
AU Buist, I. A.; Solsberg, L. B.
CS S. L. Ross Environ. Res. Ltd.
LO Ottawa, ON, Can.
SO Proc. Tech. Semin. Chem. Spills, 2nd, 208-28.
Environ. Prot. Serv.: Ottawa, Ont.
SC 59-2 (Air Pollution and Industrial Hygiene)
SX 60
DT C
CO 54GDAU
PY 1985
LA Eng

AB Of all the measures examd. for the control of the vapor or gas component of spills of chems. and liquefied gases (33 priority substances), lifting and dispersing the vapor or gas plume is by far the most feasible control technique; although the method does not recover the contaminant or render it harmless, the risk to human health and the immediate environment is greatly reduced. The 2nd most promising system for vapor control from spills is the use of a burner or flare to combust the escaping substances; however this method is applicable to combustible materials, involves more risk, and requires more development. The use of absorption, adsorption, and recompression and condensation/liquefaction does not appear feasible because of the wt. of materials and equipment required.

KW safety chem spill vapor control; chem spill air pollution control

IT Air pollution; (by vapors, from chem. spills, control of, methods for)

IT Accidents; (chem. spills, vapor emission from, control of, methods for)

IT Poisons; (gaseous, air pollution by, from chem. spills, control of, methods for)

IT Leak; (of chems., vapor emission from, control of, methods for)

IT Transportation; (of hazardous chems., spills in, vapor emission in, control of, methods for)

IT Chemicals; Petroleum gases, liquefied; (spills, vapor emission from, control of, methods for)

IT Gases; (hazardous, air pollution by, from chem. spills, control of, methods for)

IT Natural gas; (liquefied, spills, vapor emission from, control of, methods for)

IT 74-85-1, biological studies; 74-86-2, biological studies; 74-89-5, biological studies; 75-01-4, biological studies; 106-99-0, biological studies; 115-07-1, biological studies; 115-10-6 124-38-9, biological studies; 593-70-4 1333-74-0, biological studies; 7446-09-5, biological studies; 7647-01-0, biological studies; 7664-41-7, biological studies; 7782-50-5, biological studies; 7783-06-4, biological studies; 7784-42-1 25167-67-3: (spills, of liquefied, vapor emission from, control of, methods for)

IT 50-00-0, biological studies; 56-23-5, biological studies; 64-18-6, biological studies; 64-19-7, biological studies; 67-66-3, biological studies; 71-43-2, biological studies; 75-07-0, biological studies; 75-15-0, biological studies; 75-21-8, biological studies; 75-56-9, biological studies; 107-13-1, biological studies; 302-01-2, biological studies; 7664-39-3, biological studies; 7664-93-9, biological studies: (spills, vapor emission from, control of, methods for)

(CAS)

AN CA101(16):135934g
TI **Vehicle-portable systems for multi-media analysis at chemical spill sites**
AU Lockwood, J.; Halman, R.
CS Farrington, Lockwood Co. Ltd.
LO Ottawa, ON, Can.
SO Proc. Tech. Semin. Chem. Spills, 1st, 213-24.
Environ. Prot. Serv. (Can.): Ottawa, ON.
SC 59-0 (Air Pollution and Industrial Hygiene)
SX 19, 61, 79
DT C
CO 51ZGAB
PY 1983
LA Eng
AB A review with 2 refs.

KW water analysis chem spill review; soil analysis chem spill review; environmental analysis chem spill review; portable analytical system spill review
IT Accidents; (chem. spills, air and soil and water anal. at sites of, vehicle-portable systems for, development of)
IT Air analysis; Environmental analysis; Soil analysis: (hazardous substance detn. in, at chem. spill sites, vehicle-portable systems for, development of)
IT Chemicals; (spills of, air and soil and water anal. at sites of, vehicle-portable systems for, development of)
IT 7732-18-5, analysis (hazardous substance detn. in, at chem. spill sites, vehicle-portable systems for, development of)
(CAS)

IV. RAMIFICATIONS

IV. RAMIFICATIONS

A. PUBLIC OPINION:

0182046 86-040598
AMERICA'S TOXIC TREMORS,
STARR, MARK ; ET AL, ; HAGER, MARY ; FRIDAY, CAROLYN ; COOK, WILLIAM J.
* NEWSWEEK, AUG 26, 85, V106, N9, P18(2)

JOURNAL ARTICLE: A SPATE OF TOXIC CHEMICAL SPILLS IN THE U.S. DURING AUGUST 1985 HAS REKINDLED PUBLIC FEARS ABOUT HAZARDOUS MATERIALS. IN THE WAKE OF THE DECEMBER 1984 CONTAMINATION INCIDENT AT BHOPAL, INDIA, THE U.S. CHEMICAL INDUSTRY HAS STEPPED UP ITS SAFETY PROGRAMS. FEDERAL OVERREACTION IN THE MATTER OF TOXIC THREATS HARDLY SEEMS LIKELY. CONGRESS HAS BEEN UNABLE TO AGREE ON LEGISLATION TO EXTEND SUPERFUND, AND EPA HAS SLOWED CLEANUP WORK AT MANY HAZARDOUS WASTE DUMP SITES.

DESCRIPTORS: *CHEMICAL SPILLS ; *INDIA ; *WEST VIRGINIA ; *UNION CARBIDE CO ; *CONTAMINATION INCIDENTS ; *HAZARDOUS WASTE DISPOSAL ; EPA, FEDERAL
REVIEW CLASSIFICATION: 02
(ENV)

TITLE: Avoiding Future Bhopals.
AUTHOR: Bowonder, B., Kasperson, Jeanne X., Kasperson, Roger E.
* SOURCE: Environment, Vol. 27, Sept. 1985: 6-13, 31-37.
(LC)

TITLE: Bhopal: Its Setting, Responsibility, and Challenge.
AUTHOR: Sufrin, Sidney C.
PUBLISHER: Delhi : Ajanta Publications
DATE: 1985.
(LC)

0176251 *85-005895
BHOPAL: THE ENDLESS AFTERSHOCKS,
* CHEMICAL WEEK, DEC 19, 84, V135, N25, P33(5)
(ENV)

****** SEE SECTION I-A FOR MORE DETAIL ******

1569085 DATABASE: MI File 47
Bridesburg stinks! (pollution-riddled Philadelphia-area community)
Duffy, Glen; D'Anella, Mary
Philadelphia Magazine v73 p132(13) Dec 1982
CODEN: PHLDDB
illustration; photograph

GEOGRAPHIC LOCATION: Pennsylvania
GEOGRAPHIC CODE: NNUSLPA SIC CODE: 2800
NAMED PEOPLE: Kumosinski, Bob--attitudes; Dombrowski, Al--attitudes; Keifer, Al--environmental policy; Hall, Carolyn--correspondence, reminiscences, etc.; Coppola, Jim--investigations; Alcota, Jay--public relations; Osborne, Skeets--attitudes; Grabelski, John--attitudes
COMPANY NAME(S): Rohm and Haas Co.--environmental aspects; Allied Chemical Corp.--environmental aspects; Philadelphia Coke Co.--planning
DESCRIPTORS: Bridesburg, Pennsylvania--ecology; pollution--Pennsylvania; airqualitymanagement--Pennsylvania; Concerned Citizens of Bridesburg--environmental policy; carcinogens--Pennsylvania; chemical industries--Pennsylvania
(MAG)

TITLE: A Cloud Over Bhopal : Causes, Consequences, and Constructive Solutions.
AUTHOR: De Grazia, Alfred
PUBLISHER: Bombay ; New York : Published by Kalos Foundation for the India-America Committee for the Bhopal Victims : Popular Prakashan ; Distributor.
DATE: 1985
(LC)

0102882 *75-002831
ENVIRONMENTAL DAMAGE,
PRESENTED AT NATL CONF ON CONTROL OF HAZARDOUS MATERIAL SPILLS, SAN FRANCISCO, AUG 25-28, 74, P349 (24)

SPECIAL REPORT FIVE PAPERS ARE PRESENTED DISCUSSING VARIOUS ASPECTS OF THE ENVIRONMENTAL DAMAGE CAUSED BY HAZARDOUS MATERIAL SPILLS. THE IMPORTANCE OF WATERWAY DILUTION CAPACITY IN HAZARDOUS MATERIAL SPILLS IS EXPLORED, AND A METHOD DESIGNED TO INCLUDE THIS PARAMETER IN RISK DECISION FRAMEWORKS IS APPRAISED. STUDY OF THE PUBLIC ACCEPTANCE OF MORTALITY RISK

ARISING FROM INVOLUNTARY EXPOSURE TO SOCIOTECHNICAL SYSTEMS INDICATES THAT SOCIETY HAS TACITLY ACCEPTED A RANGE OF RISK EXPOSURES, AN UNAVOIDABLE ELEMENT OF A TECHNICAL SOCIETY, AS PART OF THE PRESENT DAY LIFESTYLE. A SET OF VALUES THAT MAY INDICATE THE AMOUNT THAT USERS MIGHT BE WILLING TO PAY FOR INCREASED SAFETY IS PRESENTED. METHODS OF ASSESSING RISK MODELS FOR HAZARDOUS MATERIALS TRANSPORT ARE DESCRIBED. (6 DIAGRAMS, 1 GRAPH, 2 MAPS, 23 REFERENCES, 9 TABLES)

DESCRIPTORS: *CHEMICAL SPILLS ; *CHEMICAL DAMAGE ; *WATERWAYS ; *DIFFUSION ; *TRANSPORTATION SAFETY ; *FORMALDEHYDE ; *SOIL CONTAMINATION *BENTHIC COMMUNITIES ; *GROUNDWATER ; CONF PAPER

REVIEW CLASSIFICATION: 02

(ENV)

1819112 DATABASE: MI File 47 *Use Format 9 for FULL TEXT*

Grim cloud of worry reaches U.S. (potential chemical accidents)

Chaze, William L.

* US News and World Report v97 p27(1) Dec 17 1984

CODEN: XNWRA

illustration; photograph

AVAILABILITY: FULL TEXT Online

LINE COUNT: 00070

GEOGRAPHIC LOCATION: West Virginia

GEOGRAPHIC CODE: NNUSUWV SIC CODE: 2800

COMPANY NAME(S): Union Carbide Corp.—quality control

DESCRIPTORS: Institute, West Virginia--pollution; chemical industries--quality control; West Virginia--industries

(MAG)

2050446 DATABASE: MI File 47 *Use Format 9 for FULL TEXT*
Living dangerously. (re-assessing our technology in light of recent accidents; includes list of milestones in technological progress)
Trafford, Abigail; Gabor, Andrea
* US News and World Report v100 p19(4) May 19 1986
CODEN: XNWRA
illustration; photograph
AVAILABILITY: FULL TEXT Online
LINE COUNT: 00162
SIC CODE: 1629
(MAG)

******** SEE SECTION II-A FOr MORE DETAIL ********

0292602 EIM8505-024282
PERCEPTION OF RISK: A JOURNALIST'S PERSPECTIVE.
Omang, Joanne
Washington Post, Washington, DC, USA
Conference Title: Analysis of Actual Versus Perceived Risks (Proceedings of the Society for Risk Analysis International Workshop).
Conference Location: Washington, DC, USA Conference Date: 1981 Jun 1-3
Sponsor: Soc for Risk Analysis; WHO, Geneva, Switz; NAS, Board on Toxicology & Environmental Health Hazards, Washington, DC, USA; NAS, Assembly of Behavioral & Social Sciences, Washington DC, USA
Source: Advances in Risk Analysis v 1. Publ by Plenum Press, New York, NY, USA and London, Engl p 267-271 1983
CODEN: ARANES ISBN: 0-306-41397-3
E.I. Conference No.: 04170
Language: English

The actual risks from toxic chemicals probably peaked in the late 1950s and early 1960s when there were few controls on industry, but public awareness of the risk is a product of the last 15 years. Scientists and doctors and environmental groups began saying two things, both equally important: first, that the chemicals were dangerous, real problems; and second, that the problems could be fixed. Only then did the risks from toxic chemicals begin to make people angry and afraid.

Descriptors: *ACCIDENT PREVENTION--*Analysis; ENVIRONMENTAL PROTECTION--Efficiency
Identifiers: CANCER RISK; INDUSTRIAL TOXIC WASTES; RISK PERCEPTION; WATER CONTAMINATION; LONG-TERM RISKS

Classification Codes: 914 (Safety Engineering); 461 (Biotechnology); 622 (Radioactive Materials); 804 (Chemical Products); 901 (Engineering Profession) 91 (ENGINEERING MANAGEMENT); 46 (BIOENGINEERING); 62 (NUCLEAR TECHNOLOGY); 80 (CHEMICAL ENGINEERING);

(EEM)

1939068 DATABASE: MI File 47

Putting the heat on polluters; increasingly, frustrated citizens are banding together to keep their neighborhoods free of chemical contamination.

Stranahan, Susan Q.

* National Wildlife v23 p30(4) Aug-Sept 1985

CODEN: NAWLA

illustration; photograph

DESCRIPTORS: hazardous wastes--cases; environmental protection--citizen participation

(MAG)

2045583 DATABASE: MI File 47 *Use Format 9 for FULL TEXT*

Time for chemists to pull their heads from the sand. (if chemists ignore safety concerns, the chemical industry may become as hamstrung as nuclear power) (column)

Cowen, Robert C.

* Technology Review v89 p6(2) Feb-March 1986

CODEN: TEREA

illustration

ARTICLE TYPE: column

AVAILABILITY: FULL TEXT Online

LINE COUNT: 00099

SIC CODE: 2800

DESCRIPTORS: Chemical industries--public opinion; Chemists-- public relations; Industrial safety--public opinion; Hazardous substances--public opinion; Industrial accidents--public opinion; Chemicals--safety measures

(MAG)

0181648 *86-037394
TOXIC CHEMICAL ACCIDENTS IN NEW YORK STATE: THE RISK OF ANOTHER BHOPAL,
JAFFEE, SUSAN ; WARD, DOUGLAS H.
NEW YORK STATE ATTORNEY GENERAL ENV PROTECTION JAN 14, 86 (75)

STATE/LOCAL GOVT REPORT: THE PROSPECTS FOR A MAJOR CHEMICAL DISASTER IN NEW YORK, SIMILAR TO THE ONE THAT OCCURRED IN DECEMBER 1984 IN BHOPAL, INDIA, ARE EXAMINED. RECORDS OF TOXIC CHEMICAL ACCIDENTS IN NEW YORK STATE^ WHICH OCCUR EVERY DAY^ ARE COMPILED. FROM JANUARY 1983 TO NOVEMBER 1985 THERE WERE 706 REPORTED ACCIDENTS; THIS TOTAL ACTUALLY UNDERESTIMATES THE NUMBER OF ACCIDENTS. LAWS AND REGULATIONS COMPOSING THE STRANDS OF THE LEGAL SAFETY NET INTENDED TO PROTECT THE PUBLIC AND ENVIRONMENT FROM TOXIC CHEMICAL ACCIDENTS ARE SUMMARIZED. ANALYSIS SHOWS THAT MANY ACCIDENTS GO UNREPORTED, RESPONSIBLE PARTIES ARE NOT PUNISHED, COMMUNITIES ARE NOT INFORMED ABOUT TOXIC CHEMICALS IN THEIR AREA, AND ACCIDENT PREVENTION REGULATIONS AND EMERGENCY PLANS DO NOT EXIST.

DESCRIPTORS: *NEW YORK ; *COST BENEF ANALYSIS; CHEMICAL ; *CHEMICAL CONTAM CONTROL ; *CHEMICAL USAGE ; *CHEMICAL SPILLS ; LAW, ENV; FED ; LAW, ENV; STATE LOCAL ; EMERGENCY PLANNING ; TOXIC SUBSTANCES CONT ACT 76
REVIEW CLASSIFICATION: 02
(ENV)

1931373 DATABASE: MI File 47
W. Va., teacher urges shut down of chemical plant. (Don Wilson heads People Concerned About MIC, Union Carbide chemical)
Jet v68 p23(1) July 15 1985
CODEN: JEICA
COLLECTION 29E0160
AVAILABILITY: COLLECTION 29E0160
GEOGRAPHIC LOCATION: West Virginia; India
GEOGRAPHIC CODE: NNUSUWV; ACII
NAMED PEOPLE: Wilson, Don--attitudes
COMPANY NAME(S): Union Carbide Corp.--public opinion

DESCRIPTORS: methyl isocyanate--public opinion; Bhopal, India--accidents, etc.; Institute, West Virginia--industries
(MAG)

B. HEALTH EFFECTS — EPIDEMIOLOGY:

81-01051
2,3,7,8-Tetrachlorodibenzo-p-dioxin levels in cow's milk from the contaminated area of Seveso, Italy.
Fanelli, R.; Bertoni, M. P.; Bonfanti, M.; Castelli, M. G.; Chiabrando, C.; Martelli, G. P.; Noe, M. A.; Noseda, A.; Garrattini, S.; Binaghi, C.; Marazza, V.; Pezza, F.; Pozzoli, D.; Cicognetti, G.
Mario Negri Inst. for Pharmacological Research, Via Eritrea 62, 20157 Milan, Italy
BULLETIN OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY 24(4), 634-639, 9
Coden: BECTA6 Publ.Yr: Apr 1980
illus. refs.
No abs.
Languages: ENGLISH
Doc Type: JOURNAL PAPER

Milk samples were collected following the accidental release of TCDD from a chemical plant at Seveso in Jul. 1976. Samples of 75-100 mL were dried, the residue processed, and the aliquots analyzed by GC-mass fragmentography. Quantitative determination of TCDD was made by peak height comparison between samples and known amounts of standard TCDD. The detection limit, calculated on 180 negative samples, averaged 32+/-19 (SD) ng/L of milk and ranged from 10 to 120 ng/L. The highest TCDD levels were found in samples collected close to the chemical plant; levels decreased over time when >1 sample was collected at different times from the same farm. High levels (>7 ppb) indicate that human exposure must have occurred through the consumption of dairy products. With 1 exception, data from a 1978 monitoring program suggest that TCDD is not accumulating to measurable levels in cow's milk outside the contaminated zone. (FT)

Descriptors: Milk; Mammals; Italy; Organochlorine compounds
Identifiers: cows; TCDD; Seveso
(POL)

0179327 *85-023931
2-ETHYLHEXANOL: ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS,
ENV CANADA ENV PROTECTION SERVICE REPORT, SEP 84, P1(57)

AN ENVIRONMENTAL AND TECHNICAL INFORMATION FOR PROBLEM SPILLS MANUAL FOR 2-ETHYLHEXANOL IS PRESENTED. THE MANUAL IS INTENDED FOR USE BY SPILL SPECIALISTS FOR DESIGNING COUNTERMEASURES FOR SPILLS AND TO ASSESS THEIR IMPACT ON THE ENVIRONMENT. FACTORS SUCH AS COMMERCE AND PRODUCTION,

CONTAMINANT TRANSPORT, ENVIRONMENTAL DATA, HUMAN HEALTH, SPILL COUNTERMEASURES, AND ANALYTICAL METHODS RELATING TO 2-ETHYLHEXANOL ARE PRESENTED. (4 DIAGRAMS, 14 GRAPHS, 10 REFERENCES, 7 TABLES,)

DESCRIPTORS: *CHEMICALS ; *CHEMICAL CONTAM CONTROL ; *HEALTH, ENV ; *WATER POLLUTION ; *AIR POLLUTION ; CHEMICAL SPILLS ; CHROMATOGRAPHY, GAS FLAMMABILITY ; SOLUBILITY, LIQUID ; CHEMICAL TRANSPORT ; CONTAINMENT ; THRESHOLD LIMIT VALUES ; CANADA
REVIEW CLASSIFICATION: 02
(ENV)

TITLE: Bhopal Gas Tragedy: Delhi Science Forum Report.
PUBLISHER: New Delhi : Society for Delhi Science Forum.
DATE: 1984
(LC)

1115803
Bhopal: The endless aftershocks.
* Chemical Week December 19, 1984 p. 33-42

World: Chemical industry execs are taking a look at their operations following the accident at Union Carbide India's Bhopal plant. and govt officials are seeking ways to prevent similar tragedies. Union Carbide (US) and its Indian subsidiary have offered to provide $1.84 mil in emergency aid to victims of the accident. OSHA sent teams of investigators to Carbide's plants at Institute, WV, and Woodbine, GA, to examine safety practices and plans to investigate the operations of other chemical firms that use methyl isocyanate to produce pesticides. A House Energy & Commerce subcommitte will hold hearings on EPA's activities to prevent chemical accidents in the US.

Carbide is the only US producer of methyl isocyanate (MIC), and Bayer (W Germany) the sole European producer. According to SRI Intnl, US consumption of MIC reached 23-28 mil lb in 1982, although capacity is nearly 50 mil lb. Several US pesticide producers buy MIC from Union Carbide for use as an intermediate in methomyl, carbofuran and other pesticides. Carbide requires its customers to rigorously train their workers on the safe handling and storage of MIC and will not sell to any firm that violates procedures during operation or cleanup.

FMC do Brasil will probably delay start-up of its $5 mil, 500 m tpy carbofuran plant in Uberaba, Brazil, due to the Bhopal accident. The plant

was scheduled to open in 1/85. Article discusses liability insurance coverage for the chemical industry, methyl isocyanate processes and US pesticides based on methyl isocyanate.

*0 W *World *2800000 *Chemicals & Allied Products *23 *productn mgmt
(PRO)

0326580 EIM8510-058260
CHEMICALS IN THE ENVIRONMENT: AN APPROACH TO ESTIMATE MAGNITUDE OF RISK.
Nees, Paul O.
Occidental Chemical Corp, Niagara Falls, NY, USA
Conference Title: Environmental Engineering, Proceedings of the 1985 Specialty Conference.
Conference Location: Boston, MA, USA Conference Date: 1985 Jul 1-5
Source: Publ by ASCE, New York, NY, USA p 1088-1096 1985
E.I. Conference No.: 06686
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0053593 NIOSH-00056892
Emergency Reference Levels for Reactor Accidents: A Re-Examination of the Windscale Reactor Accident
Baverstock, K. F., and J. Vennart
* Health Physics, Vol. 30, No, 4, pages 339-344, 19 references April 1976
CODEN: HLTPAO

Application of the data in the Medical Research Council report on "Criteria for Controlling Radiation Doses to the Public after Accidental Release of Radioactive Material" to the circumstances of the Windscale reactor accident, confirms the views held at the time of the accident that iodine-131 was the most important radionuclide concerned, especially with respect to its ingestion in milk by infants, and that control of milk distribution would significantly reduce its effects. Estimates of dose in thyroids using data in the report and activities of iodine-131 in air, on pasture and in milk measured at the time of the accident agree well with those made from direct measurements of the activities of iodine-131 in human thyroids. It is shown that the dose resulting from ingestion of strontium-89, strontium-90, iodine-131 and cesium-137 in milk can be many times greater than from inhalation of these radionuclides after their accidental release to the environment. This has a important bearing on the siting of nuclear reactors in relation to milk producing areas.

DESCRIPTORS: Ionizing radiation; Nuclear radiation; Nuclear reactor accidents; Radiation sources; Radioactive isotopes; Food contamination; Environmental contamination; Radiation metals; Radiation control; Radiation protection; Radioactive materials; 10043660; 10098972; 10045973

(OSH)

0174290 84-006199

GROUNDWATER CONTAMINATION IN THE UNITED STATES,

PYE, VERONICA I. ; PATRICK RUTH; QUARLES JOHN

ACADEMY NAT SCIENCES ENV ASSESS COUNCIL, PHILADELPHIA,

UNIV OF PENNSYLVANIA/ACADEMY OF NATURAL SCIENCES REPORT, 1983, (315)

ACADEMIC REPORT VARIOUS ASPECTS OF GROUNDWATER ARE DEFINED, AND NATURAL AND ANTHROPOGENIC FACTORS AFFECTING ITS QUALITY ARE DESCRIBED. KNOWN EFFECTS OF GROUNDWATER CONTAMINATION IN THE U.S. ON HUMAN HEALTH AND THE ENVIRONMENT ARE DISCUSSED, AND POSSIBLE METHODS FOR MITIGATING CONTAMINATION ARE EXAMINED. TOPICS EXPLORED INCLUDE: IMPORTANCE OF THE GROUNDWATER RESOURCE; SOURCES OF CONTAMINATION, SUCH AS HAZARDOUS WASTES, SEPTIC TANKS, AGRICULTURAL RUNOFF, ACCIDENTAL SPILLS, LAND DISPOSAL OF SLUDGE, MINING, HIGHWAY DE-ICING SALTS, BRINE DISPOSAL ASSOCIATED WITH THE PETROLEUM INDUSTRY, AND RADIOACTIVE SOURCES; EFFECTS OF GROUNDWATER CONTAMINATION ON PUBLIC HEALTH, INCLUDING ACUTE AND CHRONIC DISEASES; GEOGRAPHICAL EXTENT OF CONTAMINATION; MONITORING; REMEDIAL ACTION AND REHABILITATION OF AQUIFERS; FEDERAL STATUTES, AND STATE AND LOCAL MEASURES. (NUMEROUS REFERENCES, TABLES)

DESCRIPTORS: *GROUNDWATER ; *WATER QUALITY PROGRAMS ; *WATER POLLUTION EFFECTS ; *HEALTH, ENV ; *MONITORING, ENV-WATER ; *AQUIFERS ; *WATER LAW ; AGRICULTURAL RUNOFF ; SEWAGE DISPOSAL ; CHEMICAL RESIDUES ; DISEASES ; SEWAGE DISPOSAL, LAND ; HYDROLOGY ; EPA, FEDERAL

REVIEW CLASSIFICATION: 19

(ENV)

1166617 PB86-122033/XAB

Health Aspects of Chemical Safety. Interim Document 17. Progress Report on the WHO (World Health Organization) European Regional Programme on Chemical Safety, January 1983-June 1984

World Health Organization, Copenhagen (Denmark). Regional Office for Europe.

Corp. Source Codes: 032694002

Sponsor: Commission of the European Communities, Luxembourg.
1984 136p
See also PB85-121358. Prepared in cooperation with Commission of the European Communities, Luxembourg.
Languages: English
NTIS Prices: PC A07/MF A01 Journal Announcement: GRAI8604
Country of Publication: Other

The report is divided into the following sections: Manpower development and training; chemical accidents and emergencies (rehabilitation, public health system response to acute poisoning); monitoring of exposure and assessment of health effects; decision-making models and tools for control of chemicals; and collaboration and exchange of information concerning control methods and procedures.

Descriptors: *Toxicity; *Epidemiology; *Chemical industry; Public health
Identifiers: *Health hazards; Developing country application; Monitoring NTISWHOROE
Section Headings: 6T (Biological and Medical Sciences—Toxicology); 6E (Biological and Medical Sciences—Clinical Medicine); 6J (Biological and Medical Sciences—Industrial (Occupational) Medicine); 57Y (Medicine and Biology—Toxicology); 57U (Medicine and Biology—Public Health and Industrial Medicine); 44G (Health Planning and Health Services Research—Environmental and Occupational Factors); 68G (Environmental Pollution and Control—Environmental Health and Safety)
(NTIS)

0992929 PB83-213025
Health Aspects of Chemical Safety. Planning Emergency Response Systems for Chemical Accidents. Interim Document 1. Emergency Response to Chemical Accidents
Jones, P. H. ; Gilad, A. ; Chrst, R. ; Liverman, D. ; Mitran, E.
World Health Organization, Copenhagen (Denmark). Regional Office for Europe.
Corp. Source Codes: 032694002
Sponsor: United Nations Development Programme.
1981 262p
See also report number 4, PB83-213058. Sponsored in part by United Nations Development Programme.
Languages: English
NTIS Prices: PC A12/MF A01 Journal Announcement: GRAI8319
Country of Publication: Other

An emergency response system for chemical accidents is designed to reduce the impact of an accident by rapid containment. It is necessary to know the nature of the chemicals; how to deal with them; the toxic, physical, and chemical properties of the materials; and the level of risk involved in contact, both for the emergency crews and the adjacent population. To prepare this report, two background studies were made: 1) Organizational model of a countrywide emergency response system for chemical accidents; and 2) survey of existing system components in European countries. Two case studies were also submitted: The release of 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin (TCDD) at Seveso, Italy; and the release of chlorine in Mississauga, Ontario, Canada. The studies recommended the publishing of guidelines which are contained in section 1 of this document. Section 2 contains the result of the survey of existing procedures and arrangements for dealing with emergencies and accidents involving toxic or potentially toxic chemicals. Section 3 contains the two case studies mentioned.

Descriptors: *Chemical compounds; *Accidents; *Public health; *Guidelines ; Safety; Risk; Chlorine; Management planning; Cargo transportation; Environmental surveys Identifiers: *Foreign technology; *Toxic substances; *Emergency services Dibenzodioxin/tetrachloro; Dioxin; Developing country application; NTISWHORE

Section Headings: 6E (Biological and Medical Sciences--Clinical Medicine) ; 6J (Biological and Medical Sciences--Industrial (Occupational) Medicine) 6F (Biological and Medical Sciences--Environmental Biology); 57U (Medicine and Biology--Public Health and Industrial Medicine); 57Y (Medicine and Zoology--Toxicology); 99GE (Chemistry--General); 57H (Medicine and Biology--Ecology); 68G (Environmental Pollution and Control--Environmental Health and Safety)

(NTIS)

0180244 *85-029986

HEALTH HAZARD IDENTIFICATION (PREVENTING ILLNESS IN THE WORKPLACE),

OTA REPORT H-256, APR 85, P41(24)

FED GOVT REPORT PREVENTING WORKPLACE-RELATED DISEASE REQUIRES THAT ASSOCIATIONS BETWEEN ACTIVITIES AND EXPOSURES AND DISEASES BE IDENTIFIED.

THE DISCIPLINES OF OCCUPATIONAL MEDICINE, EPIDEMIOLOGY, AND TOXICOLOGY HAVE BEEN IMPORTANT IN DESCRIBING ASSOCIATIONS. SOME OF THE MOST SUCCESSFUL EFFORTS AT PREVENTION, SUCH AS THE MARKED REDUCTIONS IN EXPOSURE TO VINYL CHLORIDE, BEGAN WITH A PHYSICIAN NOTING AN UNUSUAL CLUSTER OF DISEASES. EPIDEMIOLOGY IS IMPORTANT LESS IN INITIAL IDENTIFICATION OF HAZARDS THAN IN PROVIDING EVIDENCE FOR OR AGAINST AN ASSOCIATION. (1 PHOTO, 7 TABLES,)

DESCRIPTORS: *HEALTH SAFETY, OCCUPATIONAL ; *RESPIRATORY DISORDERS ; *CARCINOGENIC AGENTS ; *CHEMICAL RESIDUES ; *MONITORING, ENV-BIOLOGICAL ; *INFORMATION SYSTEMS, ENV ; BIOASSAY ; HEAVY METALS ; TERATOGENIC AGENTS

REVIEW CLASSIFICATION: 02
(ENV)

SI - PESTAB/78/2186
AU - Allen JR
AU - vanMiller JP
AD - Univ. Wisconsin Med. Cent., Dep. Pathol. & Reg. Primate Res. Cent., Madison, WI 53706
TI - **Health implications of 2,3,7,8- tetrachloro dibenzo- p-dioxin exposure in primates.**
SO - In: Pentachlorophenol. Rao, K. R., ed. (New York: Plenum Press): pp. 371-379 1977 (16 References)
CD - BOOKA
AB - PESTAB. Effects of tetrachloro dibenzo-p- dioxin (TCDD) on human health are reviewed. Accidental exposures have afforded an insight into the ramifications for humans of exposure to this substance. The largest exposure accident occurred in north Italy where a mixture of materials containing TCDD were exploded over a large area of land being used for industrial, urban, and agricultural purposes. Headaches, nausea, vomiting, and skin disorders were all reported among those thousands exposed to the toxic chemicals, the most toxic of which was TCDD. Severe liver disorders, chloracne, emphysema, myocardial degeneration, hypertension with resulting kidney damage, neurological disturbances, and a single case of intestinal carcinoma have been reported due to TCDD exposure in earlier explosions. A common feature of all the industrial accidents has been the persistence of TCDD in the contaminated areas, as well as the persistence of the toxic effects experienced by the exposed persons. The long

term effects of TCDD exposure are not certain at this time. Environmental contamination by dioxins is increasing due to the extensive use of chemicals containing minute quantities of these compounds. Results of laboratory investigations on TCDD exposed nonhuman primates, and of low level exposure of rats to TCDD are reported. Data thus far indicate that anemia, leukopenia, gastritis, and ulceration, irregularities in menstrual cycles, difficulties in conception, early abortions, abnormal births, alterations in the immune response and cancer may be aftermaths of chronic low level exposure to TCDD.

RN - 1746-01-6
EM - 7809
(CAS)

0153519 *81-006312

HUMAN HEALTH EFFECTS FROM ACCIDENTAL RELEASE OF TETRACHLORODIBENZO-P-DIOXIN (TCDD) AT SEVESO, ITALY,

POCCHIARI, FRANCESCO ; SILANO VITTORIO ; ZAMPIERI ALFREDO
ISTITUTO SUPERIORE DI SANITA, ITALY,
PRESENTED AT NY ACADEMY OF SCIENCES HEALTH EFFECTS OF HALOGENATED AROMATIC HYDROCARBONS CONF, NY, JUN 24-27, 78, P311 (10)

SURVEY REPORT AN EXPLOSION AT A CHEMICAL PLANT NEAR SEVESO, ITALY, ON JULY 10, 1976, RELEASED A CLOUD OF TOXIC MATERIAL CONTAINING TCDD, AMONG OTHER MATERIALS. STUDIES WERE UNDERTAKEN TO DETERMINE THE EXTENT OF HUMAN HEALTH EFFECTS RESULTING FROM THE WIDESPREAD CONTAMINATION OF THE ENVIRONMENT SURROUNDING THE PLANT. EPIDEMIOLOGICAL DATA CONCERNING SHORT-TERM EFFECTS OF TCDD EXPOSURE ARE PRESENTED. NEUROLOGIC EXAMINATIONS SHOWED BOTH SIGNS OF IDIOPATHIC SUBCLINICAL NEUROLOGIC DAMAGE AND CASES OF CLINICALLY DETECTABLE IDIOPATHIC POLYNEUROPATHY IN ADULTS. IMMUNOLOGIC INVESTIGATIONS, CYTOGENETIC EXAMINATIONS, AND EMBRYOMORPHOLOGY ANALYSES INDICATED NO ABNORMALITIES IN THESE AREAS. (1 GRAPH, 1 MAP, 14 REFERENCES, 4 TABLES)

DESCRIPTORS: *ITALY ; *TETRACHLORODIBENZODIOXINS ; *CHEMICAL SPILLS ; *CONTAMINATION INCIDENTS ; *SOIL CONTAMINATION ; CONF PAPER
REVIEW CLASSIFICATION: 02
(ENV)

0180740 *86-033393
THE IMPLICATIONS OF THE INDUSTRIAL DISASTER IN BHOPAL, INDIA,
HSE COMM FOREIGN AFFAIRS HEARINGS 98 CON 2, DEC 12, 84 (80)
(ENV)

******** SEE SECTION II-E-3 FOR MORE DETAIL ********

TITLE: Multinationals and Health: Reflections on the Seveso Catastrophe.
AUTHOR: Laporte, Joan-Ramon
SOURCE: International Journal of Health Services, Vol. 8, No. 4, 1978: 619-632.
(LC)

0181774 *86-039078
REPORT FROM BHOPAL,
D'MONTE, DARRYL
* SIERRA, NOV-DEC 85, V70, N6, P14(5)

JOURNAL ARTICLE: ONE YEAR AFTER THE RELEASE OF DEADLY METHYL ISOCYANATE IN BHOPAL, INDIA, PROBLEMS OF MEDICAL AILMENTS AND ECONOMIC DISTRESS PERSIST. AT LEAST 50,000 PEOPLE ARE SERIOUSLY ILL WITH DISORDERS OF THE LUNG EYE, LIVER, KIDNEY, AND BRAIN. BHOPAL'S MEDICAL COMMUNITY IS RELUCTANT TO USE SODIUM THIOSULFATE, AN ANTIDOTE TO CYANIDE POISONING. MANY OF THE ACCIDENT'S VICTIMS ARE POOR AND ILLITERATE, AND EITHER CANNOT RETURN TO WORK OR ARE UNABLE TO CLAIM GOVERNMENTAL STIPENDS. THE FAILURE OF URBAN ENVIRONMENTAL ORGANISMS TO TAKE ACTION IN THE AFTERMATH OF THE INCIDENT IS NOTED.

DESCRIPTORS: *CHEMICAL SPILLS ; *INDIA ; *CHEMICAL DAMAGE ; *UNION CARBIDE CO ; LOBBYING, ENV; NON U S ; CHEM POLL CONT FINANCING
REVIEW CLASSIFICATION: 02
(ENV)

TITLE: Seveso: The Questions Persist Where Dioxin Created a Wasteland.
AUTHOR: Walsh, John
* SOURCE: Science, Vol. 197, Sept. 9, 1977: 1064-1067.
(LC)

V. INFORMATION ACCESS

V. INFORMATION ACCESS

This section contains a listing of the following sources of information on chemical emergencies:

A. Journals

B. Databases

1. Commercial
2. Others/Restricted Access/Private

C. Federal, States and Local Agencies

D. Hotlines

E. Environmental Groups

F. Private Sectors

G. Others

V. INFORMATION ACCESS

A. JOURNALS:

The following journals contain information on chemical emergencies:

* Air Pollution Control Association Journal
* American Water Works Association Journal
  British Environmental Contamination & Toxicology
  Bulletin of Environmental Contamination and Toxicology
* Chemical Engineering
* Chemical & Engineering News
* Chemical Engineering Progress
* Chemical Marketing Reporter
* Chemical & Industry
* Chemical Week
* Chemosphere
* Christian Science Monitor
  Computing
  Ecolibrium
  Economist
* Environmental Forum
  Environmental Progress
* Environment
* Environment International
  Environmentalist
* Environmental Science and Technology
* EPA Journal
* Federal Register
* Health Physics
  Industry Week
  International Journal of Health Services
* Journal of Environmental Health
* Journal of Hazardous Materials
* Journal of Hydrology (Amsterdam)
  Journal of Occupational Accidents
* Management Science
  Modern Paint & Coatings
* New Scientist
* New York Times
* National Wildlife
* Newsweek
  Occupational Hazards
* Occupational Health and Safety
* Pollution Engineering
  Rubber & Plastic News
* Science
  Science of the Total Environment

* Sierra
  Small Town
* Smithsonian
  Spill Technology Newsletter
* Technology Review
  Toxic Substances Journal
* U S News and World Report
* Wall Street Journal
* Water Pollution Control Federal Journal
* Water Research
* Water Resources Research

NOTE: Journal titles preceded by an asterisk (*) are held in the U.S. EPA Headquarters Library.

V. INFORMATION ACCESS

B. DATABASES:

1. COMMERCIAL:

The following databases contain information on chemical emergencies:

(AQU) Aquatic Sciences & Fisheries Abstracts
Cambridge Scientific Abstracts
5161 River Road
Bethesda, MD 20816

(CA) CA Search
Manager, User Education
Chemical Abstracts Service
P. O. Box 3012
Columbus, OH 43201

(CAS) CAS Online
Chemical Abstracts Service
2540 Olentangy River Road
P. O. Box 3012
Columbus, OH 43210

(COM) Compendex
Communications Services Department
Engineering Information, Inc. (Ei)
345 E. 47th St.,
New York, NY 10017

(EEM) Ei Engineering Meetings
Engineering Information, Inc.
345 E. 47th St.,
New York, NY 10017

(ENV) Enviroline
Environment Information Center, Inc.
292 Madison Avenue
New York, NY 10017

(ENVB) Environmental Bibliography
Environmental Studies Institute
2074 Alameda Padre Serra
Santa Barbara, CA 93103

(FLU) BHRA Fluid Engineering Abstracts (FLUIDEX)
FLUIDEX Database Support Team
Cranfield
Bedford, MK43 OAJ
United Kingdom

(FR) Federal Register
Capital Services, Inc.
415 Second Street NE
Suite 200
Washington, DC 20002

(INS) INSPEC
(INS2) IEEE Service Center
445 Hoes Lane
Picataway, NJ 08854-4150

(LC) Library of Congress Online Catalog
10 First St., SE
Washington, DC 20540

(MAG) Magazine Index
Information Access Company
11 Davis Drive
Belmont, CA 94002

(MED) MEDLINE
Medlars Management Section
National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20209

(NNI) National Newspaper Index
Information Access Company
11 Davis Drive
Belmont, CA 94002

(NTIS) National Technical Information
U.S. Dept. of Commerce
5285 Port Royal Road
Springfield, VA 22041

(OSH) Occupational Safety & Health
Technical Information Branch
National Institute for Occupational
Safety & Health
4676 Columbia Parkway
Cincinnati, OH 45226

(PAIS) Public Affairs Information Service, Inc.
11 West 40th Street
New York, NY 10018

(POL) Pollution Abstracts
Cambridge Scientific Abstracts
5161 River Road
Bethesda, MD 20816

(TOX) TOXLINE
Medlars Management Section
National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20209

2. OTHERS/RESTRICTED ACCESS/PRIVATE:

066070 W74-01092
PRIMINARY SYSTEM DEVELOPMENT, CHEMICAL HAZARDS RESPONSE INFORMATION SYSTEM (CHRIS)
ALLAN, D. S.; HARRIS, G. H.; SCHIMKE, G. R.; NEAL, R. W.
LITTLE (ARTHUR D.), INC., CAMBRIDGE, MASS.
Journal Announcement: SWRA0702

A CHEMICAL HAZARDS RESPONSE INFORMATION SYSTEM (CHRIS) IS DESIGNED TO SATISFY THE INFORMATION NEEDS OF COAST GUARD FIELD PERSONNEL WHEN RESPONDING TO EMERGENCIES INVOLVING THE ACCIDENTAL RELEASE OF HAZARDOUS CHEMICALS INTO WATER. IT WILL ALSO SERVE NONEMERGENCY NEEDS AS THEY APPLY TO THE DEVELOPMENT OF IMPROVED SAFETY IN THE WATER TRANSPORT OF HAZARDOUS CHEMICALS. CHRIS CONSISTS OF THE ORGANIZATION AND FACILITIES NECESSARY FOR THE SYSTEM DEVELOPMENT AND OPERATION, AND FIVE HARD-COPY REFERENCE GUIDES (OR MANUALS) CONTAINING CHEMICAL-SPECIFIC DATA, LOCAL INFORMATION ON VULNERABLE LIFE FORMS AND PROPERTY AND RESPONSE RESOURCES, HAZARD ASSESSMENT PROCEDURES, AND RESPONSE METHODS. THESE DATA BASES ARE AUGMENTED WITH A COMPUTERIZED HAZARD ASSESSMENT SYSTEM. (WOODARD-USGS)

Descriptors: *WATER POLLUTION ; *CHEMICAL WASTES ; *WARNING SYSTEMS; HAZARDS ; SAFETY ; TOXICITY ; WATER POLLUTION CONTROL ; DISCHARGE(WATER)

Section Heading Codes: 5B (Water Quality Management and Protection--Sources of Pollution); 5C (Water Quality Management and Protection--Effects of Pollution); 10B (Scientific and Technical Information--Reference and Retrieval)

(WAT)

0179834 *85-026373
PUBLIC ACCESS TO HAZARD INFORMATION ABOUT CHEMICALS,
CHEMICAL MFR ASSN NEWSRELEASE, MAR 25, 85 (4)
(ENV)

******** SEE SECTION II-C FOR MORE DETAIL ********

AN CA104(12):94493d
TI **Role of computers in chemical spill response**
AU Mackay, D.
CS Dep. Chem. Eng. Appl. Chem., Univ. Toronto
LO Toronto, ON, Can.
SO Proc. Tech. Semin. Chem. Spills, 2nd, 184-9. Environ. Prot. Serv.: Ottawa, Ont.
SC 59-2 (Air Pollution and Industrial Hygiene)
SX 19, 35, 60, 61
DT C
CO 54GDAU
PY 1985
LA Eng
KW safety chem spill response computer; chem spill identification response computer
(CAS)

******** SEE SECTION III-B FOR MORE DETAIL ********

1024301 C83014682
TAKING THE STING OUT OF CHEMICALS
VOUSDEN, L.
MICRO DECIS. (GB) NO.16 80-6 FEB. 1983
CODEN: MIDEDG ISSN: 0261-5142
(INS)

******** SEE SECTION III-A FOR MORE DETAIL ********

1086109 C83028352

TRACKING AND DIFFUSING THE CHEMICAL TIME BOMB (FIRE SERVICE)

VOUSDEN, L.

COMPUTING (GB) VOL.11, NO.16 36-7 21 APRIL 1983
CODEN: CPTGB5
Treatment: APPLIC
Document Type: JOURNAL PAPER
Languages: ENGLISH

IN 1972 CHEMICAL EMERGENCY CENTRE DEVELOPED A CENTRAL DATABANK ON HAZARDOUS CHEMICALS. BUT THE SYSTEM PROVED TOO SLOW SO THE CENTRE TURNED TO A MICRO SYSTEM.

Descriptors: ADMINISTRATIVE DATA PROCESSING
Identifiers: ADP; CHEMICAL TIME BOMB; CHEMICAL EMERGENCY CENTRE; CENTRAL DATABANK; HAZARDOUS CHEMICALS; MICRO SYSTEM
Class Codes: C7190
(INS)

V. INFORMATION ACCESS

C. FEDERAL, STATE AND LOCAL AGENCIES:

1. FEDERAL

Emergency Planning/Emergency Management:

The Federal Emergency Management Agency
500 C Street, SW
Washington, DC 20742
Phone: 202-287-0438

Transportation Information:

The Department of Transportation
400 7th Street, SW
Washington, DC 20590
Phone: 202-426-4000

Health and Exposure Information:

The Center for Disease Control
1600 Clifton Road
Atlanta, GA 30333
Phone: 404-329-3534

Information Regarding Nuclear Power Plants:

The Nuclear Regulatory Commission
1717 H Street, NW
Washington, DC 20555
Phone: 202-492-7000

For further information at the State level, you should contact your:

State Environmental Agency

State Department of Natural Resources

State Department of Health

State Emergency Management Agency

State Air Quality Division

State Fire Marshall

State Police Department

The titles of the organizations may vary from State to State as well as their prescribed responsibilities. We suggest that you contact your Governor's office if you need further assistance locating the proper State Organization.

If you need further assistance at the local level, it may be helpful to contact your:

City Manager's Office

Local Fire Department

Local Hospital

Local Police Station

Local Emergency Management Agency

County Health Department

Local Environmental Agency

0179352 85-024050
STATE AND NATIONAL RESOURCES FOR COMMUNITY SPILL DISASTER PREPAREDNESS IN THE UNITED STATES,
FROEBE LARRY R.
ECOLOGY & ENV INC, TX,
* J HAZARDOUS MATERIALS, FEB 85, V10, N1, P107(18)
(ENV)

****** SEE SECTION II-C FOR MORE DETAIL ******

V. INFORMATION ACCESS

D. HOTLINES:

INFORMATION:

The Environmental Protection Agency's Chemical Emergency Preparedness Program-

In Washington, DC or Alaska: 202-479-2449

Outside Washington, DC (except Alaska) Toll free: 800-535-0202

The Chemical Manufacturers' Association's Chemical Referral Center (hours: 8am-9pm EST, Monday-Friday) -

In Washington, DC or Alaska: 202-887-1315

Outside Washington, DC (except Alaska) Toll free: 800-CMA-8200

Additionally, several organizations have emergency hotlines, here is a listing of those with their addresses and general information phone numbers:

The National Response and Information Center
c/o The Chemical Manufacturer's Association
2501 M Street, NW
Washington, DC 20037
Phone: 202-887-1255

The United State Coast Guard
2100 2nd Street, SW
Washington, DC 20593
Phone: 202-426-2390

There are also emergency hotlines in several States. We suggest you contact your Governor's office for those in your State.

V. INFORMATION ACCESS

E. ENVIRONMENTAL GROUPS:

NRDC (NATURAL RESOURCES DEFENSE COUNCIL)

ADDRESS: 122 E. 42nd Street
NEW YORK, NY 10168
PHONE: 212-949-0049

EPI (ENVIRONMENTAL POLICY INSTITUTE)

ADDRESS: 218 D St., S.E.
Washington, DC 20003
PHONE: 202-544-2600

V. INFORMATION ACCESS

F. PRIVATE SECTOR AND PROFESSIONAL ORGANIZATIONS:

AIChE (American Institute Of Chemical Engineers)

ADDRESS: 345 E. 47th Street
New York, NY 10017
PHONE: 212-705-7338

NFPA (National Fire Protection Association)

ADDRESS: Patterymarch Park
Quincy, MA 002269
PHONE: 617-770-3000

IAFC (International Association of Fire Chiefs)

ADDRESS: 1329 18th Street N.W.
Washington, DC 20036
PHONE: 202-8333420

ASSE (American Society of Safety Engineers)

ADDRESS: 1800 E. Oakton St.,
Des Plains, IL 60016
PHONE: 312-692-4121

ASME (American Society of Mechanical engineers)

ADDRESS: 345 E. 47th St.,
New York, NY 10017
PHONE: 212-705-7722

V. INFORMATION ACCESS

G. OTHERS:

NGA (National Governors' Association)

ADDRESS: Hall of the States
444 N. Capital
Washington, DC 20001
PHONE: 202-624-5300

The Red Cross

ADDRESS: 17th and D Sts., N.W.
Washington, DC 20006
PHONE: 202-737-8300

NSC (National Safety Council)

ADDRESS: 444 N. Michigan Ave.,
Chicago, IL 60611
PHONE: 312-527-4800

ACS (American Chemical Society)

ADDRESS: 1155 16th St., NW
Washington, DC 20036
PHONE: 202-872-4600

STAPPA/ALAPCO (State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials)

ADDRESS: 444 N. Capital St., NW
Suite 306
Washington, DC 20001
PHONE: 202-624-7864

GAO (General Accounting Office)

ADDRESS: 441 G St., NW
Washington, DC 20548
PHONE: 202-275-5067

OTA (Office of Technology Assessment)

ADDRESS: U.S. Congress
Washington, DC 20510
PHONE: 202-226-2160

CRS (Congressional Research Service, Library of Congress)

ADDRESS: Congressional Research Service
Library of Congress
First St., and Independence Ave., SE
Washington, DC 20540
PHONE: 202-287-5775

VI. CONFERENCES

VI. CONFERENCES

0023855 EIM8207-005083
3RD INTERNATIONAL SYMPOSIUM ON LOSS PREVENTION AND SAFETY PROMOTION IN THE PROCESS INDUSTRIES.
Anon
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries. (European Federation of Chemical Engineering (228 Event).)
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Publ by Swiss Soc of Chem Ind, Basle, Switz
5 vol, 1822 p 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION VII-A FOR MORE DETAIL ******

0180185 *85-029358
AAR'S INDUSTRIAL CHEMICAL ACCIDENT RESPONSE INFORMATION SYSTEM
MEIER G. E.
ASSN OF AMERICAN RAILROADS, DC,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P172(12)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0257715 EIM8411-089545
ADVANCES IN THE TECHNOLOGY OF HAZARDOUS SPILL RESPONSE SYSTEMS.
Ellis, Howard M.
Enviroplan Inc, West Orange, NJ, USA
Conference Title: Proceedings of the 2nd Annual Hazardous Materials Management Conference.
Conference Location: Philadelphia, Pa, USA
Conference Date: 1984 Jun 5-7
Source: Proceedings of the Annual Hazardous Materials Management Conference 2nd. Publ by Tower Conference Management Co, Wheaton, Ill, USA p 556-562 1984
E.I. Conference No.: 05237
(EEM)

****** SEE SECTION III-A FOR MORE DETAIL ******

0214379 EIM8406-046209
AIR QUALITY MODELING OF CHEMICAL SPILLS: DETERMINATION OF THERMOPHYSICAL PROPERTIES OF CHEMICALS NOT INCLUDED IN THE DATA BASE OF THE SHELL SPILLS MODEL.
Kricks, R. J.; Pan, S.; Minich, T.
Enviroplan Inc, West Orange, NJ, USA
Conference Title: Proceedings 76th APCA Annual Meeting.
Conference Location: Atlanta, Ga, USA
Conference Date: 1983 Jun 19-24
Source: Proceedings, Annual Meeting - Air Pollution Control Association 76th v 2.
Publ by APCA, Pittsburgh, Pa, USA 83-26. 7, 16p 1983
E.I. Conference No.: 04202
(EEM)

******** SEE SECTION I-B FOR MORE DETAIL ********

0214380 EIM8406-046210
AIR QUALITY MODELING OF CHEMICAL SPILLS: SENSITIVITY ANALYSES OF THERMOPHYSICAL PROPERTY PARAMETERS USED AS INPUT TO THE SHELL SPILLS MODEL.
Pan, S. C.; Kricks, R. J.; Minnich, T. R.
Enviroplan Inc, West Orange, NJ, USA
Conference Title: Proceedings 76th APCA Annual Meeting.
Conference Location: Atlanta, Ga, USA
Conference Date: 1983 Jun 19-24
Source: Proceedings, Annual Meeting - Air Pollution Control Association 76th v 2.
Publ by APCA, Pittsburgh, Pa, USA 83-26. 8, 16p 1983
E.I. Conference No.: 04202
(EEM)

******** SEE SECTION I-B FOR MORE DETAIL ********

ANALYSIS OF LIQUEFIED NATURAL GAS (LNG) RELEASE PREVENTION SYSTEMS.
Pelto, P. J.; Baker, E. G.
Battelle Pacific Northwest Lab, Richland, WA, USA
Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).
Conference Location: Philadelphia, PA, USA
Conference Date: 1984 Aug 19-22
Source: American Institute of Chemical Engineers, National Meeting 1984 Summer.
Publ by AIChE, New York, NY, USA Pap n 2d, 21p 1984
E.I. Conference No.: 05700
(EEM)

******** SEE SECTION I-A FOR MORE DETAIL ********

0041201 EIM8209-032816
APPLICATION OF FOAMS TO HAZARDOUS CHEMICAL SPILLS.
Gross, S. S.
MSA Res Corp, Evans City, Pa, USA
Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA
Conference Date: 1980 May 13-15
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA p 88-91 1980
E.I. Conference No.: 00199
(EEM)

******** SEE SECTION III-A FOR MORE DETAIL ********

0312538 EIM8508-044218
ASSESSING THE RISKS OF MARITIME TRANSPORT OPERATIONS.
Atallah, S.; Athens, P.
Risk & Industrial Safety Consultants, Chicago, IL, USA
Conference Title: MariChem83, Conference on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Hamburg, West Ger
Conference Date: 1983 Oct 18-20
Source: MariChem 83.
Publ by Gastech Ltd, Rickmansworth, Engl p 111-120 1984
E.I. Conference No.: 05667
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0377227 EIM8604-023832
ASSESSMENT AND CONTROL OF MAJOR HAZARDS.
Anon
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93.
Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl 454p 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0148897 *81-001896
ASSESSMENT OF THE POTENTIAL BEHAVIOR OF AN ACCIDENTAL SHORT-DURATION RELEASE OF GASES AND AEROSOLS
CAMERUCCI, C. ; BRAMATI L.; FRANCIOTI A.; IOANNILLI E.
ENEL, ROME,
PRESENTED AT CEC RADIOACTIVE RELEASE & DISPERSAL IN HYPOTHETICAL REACTOR ACCIDENT SEMINAR, DENMARK, APR 22-25, 80, V2, P1007 (14)
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

0377250 EIM8604-023855
BASIC APPROACH FOR THE ANALYSIS OF RISKS FROM MAJOR TOXIC HAZARDS.
Pape, R. P.; Nussey, C.
Health & Safety Executive, Major Hazards Assessment Unit, Bootle, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93.
Publ by Inst of Chemical Engineers (EFCE Publication Series, n 42), Rugby, Engl p 367-388 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

TITLE: **Bhopal: its implications for American industry.**
AUTHOR: Kendall, Rick
SOURCE: Occupational Hazards, v. 47, May 1985; p 67-72

NOTES: Describes the acciental leak of methyl isocyanate in Bhopal, India and discusses resultant legislative initiatives in the U.S.
(LC)

****** THIS CITATION ALSO APPEARS IN SECTION II-E-4 ******

0178626 *85-016411
CALCULATING THE CHEMICAL HAZARD OF RADIOACTIVE WASTE (WASTE POLICIES AND PROGRAMS, HIGH-LEVEL WASTE)
WICKHAM L. E.
EG&G IDAHO INC, ID,
ANS/ET AL WASTE MANAGEMENT 84 CONF,
TUCSON, MAR 11-15, 84, V1, P655(5)
(ENV)

****** SEE SECTION I-D FOR MORE DETAIL ******

0260157 EIM8412-091987
CHEMICAL PLANT RISK ASSESSMENT USING HAZOP AND FAULT TREE METHODS: MANAGING THE PROBLEMS OF UNCERTAINTY.
Bendixen, Lisa M.; O'Neill, J. Kevin
Arthur D. Little Inc, Cambridge, Mass, USA
Conference Title: American Institute of Chemical Engineers, 1984 Winter National Meeting (Preprints).
Conference Location: Atlanta, Ga, USA
Conference Date: 1984 Mar 11-14
Source: American Institute of Chemical Engineers, National Meeting 1984 Winter.
Publ by AIChE, New York, NY, USA Pap 43b, 15p 1984
E.I. Conference No.: 05076
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0213066 EIM8406-044896
CHEMICAL SPILL RESPONSE TRAINING FOR SUPERVISORS AND HANDLERS.
Oberholtzer, George; Acuff, James T.
Natl Spill Control Sch, Corpus Christi, Tex, USA
Conference Title: Proceedings of the 1st Annual Hazardous Materials Management Conference.
Conference Location: Philadelphia, Pa, USA
Conference Date: 1983 Jul 12-14
Source: Publ by Tower Conference Management Co, Wheaton, Ill, USA p 237-240 1983
E.I. Conference No.: 04277
(EEM)

****** SEE SECTION III-A FOR MORE DETAIL ******

0326580 EIM8510-058260
CHEMICALS IN THE ENVIRONMENT: AN APPROACH TO ESTIMATE MAGNITUDE OF RISK.
Nees, Paul O.
Occidental Chemical Corp, Niagara Falls, NY, USA
Conference Title: Environmental Engineering, Proceedings of the 1985 Specialty Conference.
Conference Location: Boston, MA, USA
Conference Date: 1985 Jul 1-5
Source: Publ by ASCE, New York, NY, USA p 1088-1096 1985
E.I. Conference No.: 06686
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0023956 EIM8207-005185
COLLECTION OF DATA FROM CHEMICAL PLANT INCIDENTS AS AN AID TO THE IMPROVEMENT OF HAZARD ANALYSIS TECHNIQUES.
Roberts, A. F.
Explos & Saf Lab, Buxton, Derbyshire, Engl
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 3. Publ by Swiss Soc of Chem Ind, Basle, Switz p 1443-1450 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0023884 EIM8207-005113
COMPARATIVE RISK ANALYSIS OF PROCESSING PLANT.
Hansen, J.; de Heer, H. J.; Kortlandt, D.
DSM, Neth
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.

Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/455-6/46 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0173169 *84-005078
COMPARISON OF CONVENTIONAL CHEMICAL SPILL AIR AND WATER DISPERSION MODELS
ALP, E. ; PORTELLI R.V.; MITCHELL A.; GUERIN S.G.; DOHERTY C.
CONCORD SCIENTIFIC CORP,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P9 (26)
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

0023908 EIM8207-005137
COMPUTER-AIDED APPLICATION OF SAFETY LAW AND REGULATION.
Ohnishi, N.
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 10/791-10/803 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0023892 EIM8207-005121
COMPUTER-AIDED OPERABILITY STUDIES FOR LOSS CONTROL.
Lihou, D. A.
Univ of Astonih Birmingham, Engl
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 7/579-7/61 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION II-C FOR MORE DETAIL ******

0131054 EIM8308-057909
CONFERENCE PAPERS - MARICHEM 82, 4TH INTERNATIONAL CONFERENCE AND EXHIBITION ON THE MARINE TRANSPORTATION, HANDLING AND STORAGE OF BULK CHEMICALS.
Anon
Conference Title: Conference Papers - MariChem 82, 4th International Conference and Exhibition on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Amsterdam, Neth
Conference Date: 1982 Jun 22-24
Source: MariChem 82. Publ by Gastech Ltd, Rickmansworth, Hertfordshire,Engl var pagings 1982
E.I. Conference No.: 01857
(EEM)

****** SEE SECTION II-B FOR MORE DETAIL ******

0180195 *85-029368
CONSIDERATIONS FOR THE DEVELOPMENT OF A HAZARDOUS CHEMICAL PERSONNEL PROTECTION SYSTEM
STULL JEFFREY O.
USCG, DC,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, FEB 5-7, 85, P293(31)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0377245 EIM8604-023850
CRITERIA FOR USE IN THE ASSESSMENT AND CONTROL OF MAJOR HAZARDS.
Helsby, G. H.; White, R. F.
Hazards Evaluation & Loss Prevention Ltd, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93.
Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 273-287 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0093620 EIM8303-020829
DEPRESSING ANALYSIS APPLIED TO CRYOGENIC PLANT SAFETY.
Chiu, Chen-hwa
Exxon Prod Res Co, Houston, Tex, USA
Conference Title: American Institute of Chemical Engineers 1982 Spring National Meeting and Chemical Plant Equipment Exposition, Preprints.

Conference Location: Anaheim, Calif, USA
Conference Date: 1982 Jun 6-10
Source: Publ by AIChE, New York, NY, USA Pap 11e, 23p 1982
E.I. Conference No.: 01016
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0180197 *85-029373
DETERMINATION OF BURN RATE AND SOOT FORMATION DURING COMBUSTION OF SOLVENTS COMMONLY CARRIED BY RAIL
DELUMYEA R. ; MOORE KATHY P.; DUKES SANDRA A.;
MILLER GEORGE I.; MORGAN M. A.; MEIER GERALD
CLEMSON UNIV,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P114(16)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0302059 EIM8506-033739
DEVELOPMENT AND EXPERIMENTAL VERIFICATION OF HACS MODELS FOR CHEMICAL SPILLS IN WATERWAYS.
Colonna, G. R.; Dodge, Franklin T.; Morrow, Thomas B.;
Buckingham, J. Christopher; Havens, Jerry A.
US Coast Guard, New Orleans, LA, USA
Conference Title: 1984 Hazardous Material Spills
Conference Proceedings: Prevention, Behavior, Control
and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA
Conference Date: 1984 Apr 9-12
Source: Publ by Government Inst Inc, Rockville, MD, USA
p 286-293 1984
E.I. Conference No.: 05911
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0180200 *85-029381
DEVELOPMENT OF A PERSON-PORTABLE ANALYTICAL SYSTEM
UNDERDOWN ALAN W.
UNDERDOWN CHEMOMETRICS LTD, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P344(16)
(ENV)

****** SEE SECTION III-B FOR MORE DETAIL ******

0180202 *85-029385
DEVELOPMENT OF A VEHICLE-PORTABLE ANALYTICAL SYSTEM FOR CHEMICAL EMERGENCIES
BOBRA A. M.
ENV CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P367(5)
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

0302054 EIM8506-033734
DEVELOPMENT OF IMPROVED COUNTERMEASURES FOR CHEMICAL SPILLS IN CANADA.
Fingas, Mervin F.
Environment Canada, Environmental Emergencies Technology Div,
Ottawa, Ont, Can
Conference Title: 1984 Hazardous Material Spills Conference
Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA
Conference Date: 1984 Apr 9-12
Source: Publ by Government Inst Inc, Rockville, MD, USA
p 255-260 1984
E.I. Conference No.: 05911
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

0312536 EIM8508-044216
DEVELOPMENTS IN DESIGN AND OPERATION OF CHEMICAL CARRIERS IN RESPONSE TO THE INCREASED DEMAND FOR SAFETY.
Riksheim, J. B.; Berg, E.; Kvandal, L.
Det Norske Veritas, Tanker Dep, Oslo, Norw
Conference Title: MariChem83, Conference on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Hamburg, West Ger
Conference Date: 1983 Oct 18-20
Source: MariChem 83. Publ by Gastech Ltd, Rickmansworth, Engl p 97-102 1984
E.I. Conference No.: 05667
(EEM)

****** SEE SECTION II-B FOR MORE DETAIL ******

0377229 EIM8604-023834
DEVELOPMENTS IN THE CONTROL OF MAJOR HAZARDS.
Barrell, A. C.
Health & Safety Executive, Major Hazards Assessment Unit, Bootle, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93.
Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 1-12 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0302023 EIM8506-033703

DEVELOPMENT OF AN APPROACH TO DETERMINE THE CONTENTS OF A SEVERELY CORRODED CHLORINE TANK CAR.

Forrest, Robert G.; Perez, Dana Ryan
US EPA, Region VI, Dallas, TX, USA
Conference Title: 1984 Hazardous Material Spills
Conference Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA
Conference Date: 1984 Apr 9-12
Source: Publ by Government Inst Inc, Rockville, MD, USA
p 33-37 1984
E.I. Conference No.: 05911
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0300763 EIM8506-032443

DESIGN OF AN EMERGENCY VENTING SYSTEM FOR A BATCH REACTION INVOLVING A HIGHLY REACTIVE CHEMICAL.

Davies, R.
Glaxochem Ltd, Ulverston, Engl
Conference Title: ISCRE 8, The Eighth International Symposium on Chemical Reaction Engineering.
Conference Location: Edinburgh, Scotl
Conference Date: 1984 Sep 10-13
Source: Institution of Chemical Engineers Symposium Series n 87.
Publ by Inst of Chemical Engineers (EFCE Event n 299), Rugby, Engl p 361-368 1984
E.I. Conference No.: 06045
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0101140 EIM8304-028352
DEVELOPMENT OF LOW-COST ANALYSIS METHODS FOR PROCESS PLANT.
Cox, R. A.; Comer, P. J.
TECHNICA, Ltd, London, Engl
Conference Title: Assessment of Major Hazards.
(EFCE Event No. 272)
Conference Location: Manchester, Engl
Conference Date: 1982 Apr 14-16
Source: EFCE Publication Series
(European Federation of Chemical Engineering) n 25.
Publ by Inst of Chem Eng (Symp Ser n 71), Rugby,
Warwickshire, Engl p 353-376 1982
E.I. Conference No.: 01708
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0058618 EIM8211-050140
DYNAMIC TESTING OF COMBINATIONAL LOGIC NETWORKS.
Yuan, Youguang; Chen, Tinhuai
Chongping Univ, China
Conference Title: Digest of Papers - FTCS 12th Annual
International Symposium, Fault-Tolerant Computing.
Conference Location: Santa Monica, Calif, USA
Conference Date: 1982 Jun 22-24
Source: Digest of Papers - FTCS (Fault-Tolerant
Computing Symposium) 12th.
Publ by IEEE, New York, NY, USA.
Available from IEEE Serv Cent (Cat n 82CH1760-8),
Piscataway, NJ, USA p 173-180 1982
E.I. Conference No.: 01160
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0312540 EIM8508-044220
EMERGENCY PROCEDURES IN THE CASE OF ACCIDENT IN THE CHEMICAL INDUSTRY AND STORAGE FACILITIES IN THE PORT AREA OF ANTWERP.
Clement, J.
Cent for the Prevention of Air & Water Pollution,
Public Health Service, Antwerp, Belg
Conference Title: MariChem83, Conference on the Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Hamburg, West Ger
Conference Date: 1983 Oct 18-20
Source: MariChem 83. Publ by Gastech Ltd,
Rickmansworth, Engl p 124-127 1984
E.I. Conference No.: 05667
(EEM)

****** SEE SECTION II-B FOR MORE DETAIL ******

0281938 EIM8503-013618
EMERGENCY RESPONSE ATMOSPHERIC DISPERSION AND ASSESSMENT SYSTEM.
Roffman, Amiram; Chandler, Martin W.; Murawski, S. A.
Energy Impact Associates, Pittsburgh, PA, USA
Conference Title: Proceedings - 77th APCA Annual Meeting.
Conference Location: San Francisco, CA,
USA Conference Date: 1984 Jun 24-29
Source: Proceedings, Annual Meeting - Air Pollution
Control Association 77th v 1.
Publ by APCA, Pittsburgh, PA, USA 84-14. 9, 15p 1984
E.I. Conference No.: 06065
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0325770 EIM8509-057450
EVALUATION OF THE SAFETY OF COMPRESSED OXYGEN SELF-RESCUERS: RESULTS OF DESTRUCTIVE TESTING.
Watson, R. W.; Furno, A. L.; Kovac, J.
US Bur of Mines, Pittsburgh Research Cent, Pittsburgh, PA, USA
Conference Title: 20 International Conference of Safety in Mines Research Institutes.
Conference Location: Sheffield, Engl
Conference Date: 1983 Oct 3-7
Source: Available from Health & Safety Executive, Explosion & Flame Lab, Buxton, Engl J2, 9p 1983
E.I. Conference No.: 05447
(EEM)

****** SEE SECTION II-C FOR MORE DETAIL ******

0284532 EIM8503-016212
EVALUATING TECHNOLOGICAL RISK: PRESCRIPTIVE AND DESCRIPTIVE PERSPECTIVES.
Lathrop, John W.
Int Inst for Applied Systems Analysis, Laxenburg, Austria
Conference Title: Risk Analysis Controversy: An Institutional Perspective, Proceedings of a Summer Study on Decision Processes and Institutional Aspects of Risk.
Conference Location: Laxenburg, Austria
Conference Date: 1981 Jun 22-26
Source: Publ by Springer-Verlag, Berlin, West Ger and New York, NY, USA p 165-180 1982
E.I. Conference No.: 04606
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0173168 *84-005077
EVAPORATION RATES OF CHEMICAL SPILLS
STIVER, WARREN ; MACKAY DONALD
UNIV OF TORONTO, CANADA
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, OCT 25-27, 83,P1 (8)
(ENV)

******** SEE SECTION I-B FOR MORE DETAIL ********

0350046 EIM8512-081726
FAILURE OF HIGH PRESSURE SYNTHESIS PIPE.
Prescott, G. R.; Blommaert, P.; Grisolia, L.
C. F. Braun & Co, Alhambra, CA, USA
Conference Title: 1985 Summer National Meeting of the AIChE.
Conference Location: Seattle, WA, USA
Conference Date: 1985 Aug 25-28
Source: American Institute of Chemical Engineers,
National Meeting 1985 Summer.
Publ by AIChE, New York, NY, USA 20b, 13p 1985
E.I. Conference No.: 07292
(EEM)

******** SEE SECTION II-A FOR MORE DETAIL ********

0313609 EIM8508-045289
FIRST THOUGHTS ON SOME OF THE WIDER QUESTIONS RAISED BY BHOPAL.
Kletz, Trevor A.
Loughborough Univ of Technology,
Dep of Chemical Engineering, Loughborough, Engl
Conference Title: 1985 Spring National Meeting
and Petro Expo '85 - American Institute of Chemical Engineers.

Conference Location: Houston, TX, USA
Conference Date: 1985 Mar 24-28
Source: American Institute of Chemical Engineers, National Meeting 1985 Spring.
Publ by AIChE, New York, NY, USA Pap 72a, 6p 1985
E.I. Conference No.: 06737
(EEM)

****** SEE SECTION I-A FOR MORE DETAIL ******

0272580 EIM8501-004260
FUTURE HEALTH AND SAFETY TRAINING AND MANAGEMENT IN INDUSTRY.
Hawthorn, R.; Eng, P.
Industrial Accident Prevention Assoc, Toronto, Ont, Can
Conference Title: Proceedings - 33rd Canadian Chemical Engineering Conference 1983.
Conference Location: Toronto, Ont, Can
Conference Date: 1983 Oct 2-5
Source: Proceedings - Canadian Chemical Engineering Conference 33rd v 2.
Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 795-800 1983
E.I. Conference No.: 04160
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0377252 EIM8604-023857
FUZZY BASED EXPERT SYSTEM FOR ANALYSIS OF ACCIDENTS.
Vaija, P.; Jarvelainen, M.; Dohnal, M.
Helsinki Univ of Technology, Lab of Chemical Engineering, Helsinki, Finl
Conference Title: Assessment and Control of Major Hazards.

Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers
Symposium Series n 93.
Publ by Inst of Chemical Engineers (EFCE Publication
Series n 42), Rugby, Engl p 397-412 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION III-A FOR MORE DETAIL ******

0180869 EIM8402-012699
FUZZY FAULT TREE ANALYSIS AND ITS APPLICATION TO THE PREVENTION OF DUST EXPLOSION.
Tanaka, H.; Lai, F. S.; Fan, L. T.
Kansas State Univ, Dep of Chemical Engineering,
Manhattan, Kans, USA
Conference Title: American Institute of Chemical
Engineers, 1983 Spring National Meeting and Petro
Expo '83 (Preprints).
Conference Location: Houston, Tex, USA
Conference Date: 1983 Mar 27-31
Source: American Institute of Chemical Engineers,
National Meeting 1983 Spring.
Publ by AIChE, New York, NY, USA Pap 75d, 31p 1983
E.I. Conference No.: 03056
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0170246 84-002179
GASTECH LTD MARICHEM 82 SYM PROCEEDINGS, AMSTERDAM, JUNE 22-24, 1982
JENS, J. L. ; MORRISSETTE M.; BERKEL T. G.;
GERRITSEN L. J.; KRUL J.; DOHRN J.; HOJER J.
IMCO, LONDON,
GASTECH (UK) REPORT, 1983, (216)
(ENV)

****** SEE SECTION II-B FOR MORE DETAIL ******

0335053 EIM8511-066733
HAZARD AND OPERABILITY STUDY: A FLEXIBLE TECHNIQUE FOR PROCESS SYSTEM SAFETY AND RELIABILITY ANALYSIS.
Shafaghi, A.; Gibson, S. B.
Battelle Columbus Lab, Columbus, OH, USA
Conference Title: Chemical Process Hazard Review.
(Based on a symposium held at the 187th Meeting of the American Chemical Society.)
Conference Location: St. Louis, MO, USA
Conference Date: 1984 Apr 8-13
Source: ACS Symposium Series 274.
Publ by ACS, Washington, DC, USA p 33-39 1985
E.I. Conference No.: 06576
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0180867 EIM8402-012697
HAZARD IDENTIFICATION DURING PROCESS DESIGN.
Huetinck, Henk
Fluor Engineers Inc, Advanced Technology Div, Irvine, Calif, USA
Conference Title: American Institute of Chemical Engineers, 1983 Spring National Meeting and Petro Expo '83 (Preprints).
Conference Location: Houston, Tex, USA
Conference Date: 1983 Mar 27-31
Source: American Institute of Chemical Engineers, National Meeting 1983 Spring.
Publ by AIChE, New York, NY, USA Pap 75b, 19p 1983
E.I. Conference No.: 03056
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0263485 EIM8412-095315
HAZARD IDENTIFICATION PROCEDURES.
Lowe, D. R. T.; Solomon, C. H.
Imperial Chemical Industries Ltd, UK
Conference Title: 4th International Symposium on Loss Prevention and Safety Promotion in the Process Industries (EFCE Event n 290). (Volume 1: Safety in Operations and Processes.)
Conference Location: Harrogate, North Yorks, Engl
Conference Date: 1983 Sep 12-16
Source: Institution of Chemical Engineers Symposium Series n 80.
Publ by Inst of Chemical Engineers (EFCE Publ Series n 33), Rugby, Warwickshire, Engl.
Distributed by Pergamon Press, Oxford, Engl & New York, NY, USA
p G8-G24 1983
E.I. Conference No.: 05523
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

TITLE: Hazardous Materials Spills Conference, 1984 Proceedings, April 9, 1984, Nashville, Tennessee
AUTHOR: Ludwigson, John, editor
SOURCE: Bureau of Explosives, Chemical Manufacturers Association, U.S. Coast Guard, U.S. Environmental Protection Agency
(LC)

0228417 EIM8408-060247
HAZOP IN THE FIELD OF INSURANCE AND RISK REDUCTION.
Laakso, Leena
Industrial Mutual Insurance Co, Helsinki, Finl
Conference Title: Proceedings - 32nd Canadian Chemical Engineering Conference.
Conference Location: Vancouver, BC, Can
Conference Date: 1982 Oct 3-6

Source: Proceedings - Canadian Chemical Engineering
Conference 32nd v 3.
Publ by Canadian Soc for Chemical Engineering,
Ottawa, Ont, Can p 1213-1218 1982
E.I. Conference No.: 03982
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0180193 *85-029366
HEALTH AND SAFETY AND TRAINING FOR HAZARDOUS MATERIALS RESPONSE PERSONNEL
MATHEMEL MARTIN S. ; CRAWFORD GEORGE M.; WESTON ROY F.
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P278(8)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0292601 EIM8505-024281
HEALTH IMPACT OF TOXIC WASTES: ESTIMATION OF RISK.
Kimbrough, Renate D.
US Dep of Health & Human Services, Cent for Disease Control,
Atlanta, GA, USA
Conference Title: Analysis of Actual Versus Perceived
Risks (Proceedings of the Society for Risk Analysis
International Workshop).
Conference Location: Washington, DC, USA
Conference Date: 1981 Jun 1-3
Source: Advances in Risk Analysis v 1.
Publ by Plenum Press, New York,
NY, USA and London, Engl p 259-265 1983
E.I. Conference No.: 04170
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0023879 EIM8207-005108
HISTORICAL AND THEORETICAL APPROACHES TO THE PREDICTION OF HAZARD AND RISK.
Marshall, V. C.
Univ of Bradford, Engl
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2.
Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/395-6/40 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0234875 EIM8408-066705
IDENTIFICATION AND ABATEMENT OF EARTHQUAKE HAZARDS IN EXISTING BUILDINGS IN THE CITY OF SANTA ROSA.
Myers, William E.
Building & Code Compliance, Dep of Community Development, Santa Rosa, Calif, USA
Conference Title: Proceedings - Structural Engineers Association of California, 50th Annual Convention 1981.
Conference Location: Coronado, Calif, USA
Conference Date: 1981 Sep 10-12
Source: Publ by Structural Engineers Assoc of California, San Francisco, Calif, USA p 47-54 1981
E.I. Conference No.: 04506
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0264819 EIM8412-096649
IDENTIFYING MAJOR PROCESS HAZARDS AT THE CONCEPT DESIGN STAGE.
Pyman, M. A. F.; Mitchell, F. R.
Technica Ltd, London, Engl
Conference Title: Design '82. (EFCE Event no 265.)
Conference Location: Birmingham, West Midl, Engl
Conference Date: 1982 Sep 22-23

Source: Institution of Chemical Engineers Symposium
Series n 76.
Publ by Inst of Chemical Engineers (EFCE Publ Series n 22),
Rugby, Warwickshire,
Engl p 96-106 1982
E.I. Conference No.: 05512
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0377247 EIM8604-023852
IFAL - A NEW RISK ANALYSIS TOOL.
Whitehouse, H. B.
Insurance Technical Bur, London, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers
Symposium Series n 93.
Publ by Inst of Chemical Engineers (EFCE Publication Series n 42),
Rugby, Engl p 309-322 1985
E.I. Conference No.: 07832
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0050008 EIM8210-041627
IMPLEMENTATION OF OFFSHORE STRUCTURAL RELIABILITY.
Furnes, Olay; Sele, Arne
Det Nor Veritas, Oslo, Norw
Conference Title: Integrity of Offshore Structures,
Papers presented at the 2nd International Symposium.
Conference Location: Glasgow, Scotl
Conference Date: 1981 Jul 1-3

Source: Publ by Appl Sci Publ, London, Engl
and Englewood, NJ, USA p 123-134 1981
E.I. Conference No.: 01002
(EEM)

******** SEE SECTION I-A FOR MORE DETAIL ********

0041235 EIM8209-032850
INDUSTRIAL HYGIENE AND TOXIC CHEMICAL SPILLS.
Langner, R. R.
Dow Chem Co, Midland, Mich, USA
Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA
Conference Date: 1980 May 13-15
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA
p 277-279 1980
E.I. Conference No.: 00199
(EEM)

0095332 EIM8304-022543
INDUSTRY'S GUIDELINES FOR RISK ASSESSMENT.
Dreith, Richard H.
Shell Oil Co, Houston, Tex, USA
Conference Title: Risk Assessment at Hazardous Waste Sites. (Based on a Symposium at the 183rd Meeting of the American Chemical Society.)
Conference Location: Las Vegas, Nev, USA
Conference Date: 1982 Mar-Apr
Source: ACS Symposium Series (American Chemical Society) 204.
Publ by ACS, Washington, DC, USA p 45-53 1982
E.I. Conference No.: 01785
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0379668 EIM8604-026273
INTEGRATED TESTING FOR THE EVALUATION OF THERMAL HAZARDS.
Hoppe, T. F.; Weir, E. D.
Ciba-Geigy Corp, Toms River, NJ, USA
Conference Title: Thermal Analysis,
Proceedings of the Seventh International Conference.
Conference Location: Kingston, Ont, Can
Conference Date: 1982 Aug 22-28
Source: v 2. Publ by John Wiley & Sons, Chichester, Engl
and New York, NY, USA p 1447-1455 1982
E.I. Conference No.: 05650
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0173286 *84-005195
INTEGRATION OF THE ENVIRONMENT RESEARCH ACTION PROGRAMME INTO THE FRAMEWORK PROGRAMME FOR COMMUNITY SCIENTIFIC AND TECHNICAL ACTIVITIES 1984-1987
KLOSE, A. ; ANGELETTI G.
CEC, BRUSSELS,
CEC (REIDEL) ANALYSIS OF ORGANIC MICROPOLLUTANTS IN
WATER 3RD SYM, OSLO, SEP 19-21, 83, P320 (8)

CONF PAPER: THE FIRST FRAMEWORK PROGRAMME FOR CEC SCIENTIFIC & TECHNICAL ACTIVITIES IS DESCRIBED. THE FRAMEWORK IS DESIGNED TO GUIDE RESEARCH ON THE NATIONAL AND COMMUNITY LEVELS CONCERNING ADVANCEMENTS IN SCIENCE AND TECHNOLOGY. THE ACTION PROGRAMS WILL BE IMPLEMENTED DURING 1984-87. AN ENVIRONMENTAL RESEARCH ACTION PROGRAMME WILL BE INTEGRATED INTO THE FRAMEWORK TO SUPPORT GENERAL ENVIRONMENTAL POLICIES OF CEC. ENVIRONMENTAL R & D WILL INCLUDE CLIMATE MODELLING AND PREDICTION, CLIMATIC CHANGES, CHEMICAL HAZARDS, AIR AND WATER POLLUTION, WASTE MANAGEMENT, AND TRANSNATIONAL POLLUTION. (4 REFERENCES, 3 TABLES)

DESCRIPTORS: *EUROPEAN ECONOMIC COMMUNITY; *ENV MANAGEMENT, INTL; *RESEARCH, ENV; *WATER POLLUTION RESEARCH; *CLIMATIC CHANGES; *REMOTE SENSING; *FINANCING, ENV; AIR POLLUTION RESEARCH; WEATHER MODIFICTN RESEARCH
REVIEW CLASSIFICATION: 08
(ENV)

INTERNATIONAL SYMPOSIUM ON LOSS PREVENTION AND SAFETY PROMOTION IN THE PROCESS INDUSTRIES, 3RD, 1980.
Anon
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Int Symp on Loss Prev and Saf Promot in the Process Ind, 3rd, Basle, Switz, Sep 15-19 1980
Publ by Swiss Soc of Chem Ind (Eur Fed of Chem Eng, 228 Event), Basle, Switz, 1980 5 vol, 1822 p
For individual papers see E.I. Conference No.: 00129 in file 165
(COM)

******** SEE SECTION II-C FOR MORE DETAIL ********

0228414 EIM8408-060244
INTRODUCTION TO GUIDE WORK HAZARD & OPERABILITY STUDIES.
Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Proceedings - 32nd Canadian Chemical Engineering Conference.
Conference Location: Vancouver, BC, Can
Conference Date: 1982 Oct 3-6
Source: Proceedings - Canadian Chemical Engineering Conference 32nd v 3.
Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can
p 1200-1205 1982
E.I. Conference No.: 03982
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0372185 EIM8603-018790
INVESTIGATION OF THE SAFETY ASPECTS IN THE USE OF HYDROGEN AS A GROUND TRANSPORTATION FUEL.
Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Hydrogen Energy Progress V, Proceedings of the 5th World Hydrogen Energy Conference.

Conference Location: Toronto, Ont, Can
Conference Date: 1984 Jul 15-20
Source: Advances in Hydrogen Energy 4 v 4.
Publ by Pergamon Press, New York, NY, USA and Oxford, Engl
on behalf of Int Assoc for Hydrogen Energy p 1881-1892 1984
E.I. Conference No.: 07500
(EEM)

****** SEE SECTION I-A FOR MORE DETAIL ******

0335058 EIM8511-066738
KINETIC AND REACTOR MODELING: HAZARD EVALUATION AND SCALE-UP OF A COMPLEX REACTION.
Chakrabarti, Ashok; Steiner, Edwin C.; Werling, Craig L.; Yoshimine, Mas
Dow Chemical Co, Midland, MI, USA
Conference Title: Chemical Process Hazard Review.
(Based on a symposium held at the 187th Meeting of the American Chemical Society.)
Conference Location: St. Louis, MO, USA
Conference Date: 1984 Apr 8-13
Source: ACS Symposium Series 274.
Publ by ACS, Washington, DC, USA p 91-105 1985
E.I. Conference No.: 06576
(EEM)

****** SEE SECTION I-C FOR MORE DETAIL ******

0168939 *84-000872
LIMITATIONS AND USEFULNESS OF METHODS FOR PREDICTING RISK OF RARE OR UNPRECEDENTED EVENTS
FARMER F. R.
UNIV OF BRADFORD, UK,
ROYAL SOCIETY OF CANADA/ET AL RISK ASSESSMENT & PERCEPTION SYM, TORONTO, OCT 18-19, 82, P109 (9)
(ENV)

****** SEE SECTION I-D FOR MORE DETAIL ******

0339017 EIM8511-070697
MACRO FAULT TREE AND ITS APPLICATION TO PETRO-CHEMICAL PLANT-ACCIDENTS.
Terano, T.; Masui, S.; Murayama, Y.; Aida, S.; Akiyama, N.
Hosei Univ, Sch of Engineering, Koganei, Jpn
Conference Title: Bridge Between Control Science and Technology, Proceedings of the Ninth Triennial World Congress of IFAC. (Volume 4: Process Industries, Power Systems.)
Conference Location: Budapest, Hung
Conference Date: 1984 Jul 2-6
Source: IFAC Proceedings Series 1985 n 4.
Publ for IFAC by Pergamon Press, Oxford, Engl, and New York, NY, USA p 1759-1763 1985
E.I. Conference No.: 06970
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0008769 EIM8207-015019
MAJOR INCIDENT CRITERIA.
Lowe, David
Imp Chem Ind Ltd, Engl
Conference Title: Opportunities and Constraints: Proceedings of the 1980 Eurochem Conference.
(EFCE Event no 239 (European Federation of Chemical Engineering)
Conference Location: Birmingham, Engl
Conference Date: 1980 Jun 24-26
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 14,
Publ by Inst of Chem Eng, Rugby, Warwickshire, Engl
p 5:1. 1-5:1. 28 1980
E.I. Conference No.: 00214
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0247009 EIM8410-078839
MANAGING THE NEW TECHNOLOGY MAINTENANCE FUNCTION.
Ponting, T. J.
Albright & Wilson Ltd, Specialist Engineering Dep, Engl
Conference Title: Process Measurement, Control and Applications.
(Part of PROMECON Control & Instrumentation Exhibition and Conference. Part of PROMECON Control & Instrumentation Exhibition and Conference.)
Conference Location: London, Engl
Conference Date: 1984 Jun 19-22
Source: Publ by Inst of Measurement & Control, London, Engl p 298-308 1984
E.I. Conference No.: 04925
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0023880 EIM8207-005109
METHODOLOGY PROBLEMS IN REPREDICTING ACCIDENTS WHICH HAVE ACTUALLY OCCURRED.
Jacobsen, Oliver Finn
Riso Natl Lab, Den
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/409-6/42 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0260162 EIM8412-091992
MODELING OF SHIPTANK VENTILATION AND OCCUPATIONAL EXPOSURES TO CHEMICAL VAPORS DURING TANK ENTRY.
Astleford, W. J.; Bass, R. L.; Colonna, G. R.
Southwest Research Inst, San Antonio, Tex, USA
Conference Title: American Institute of Chemical Engineers, 1984 Winter National Meeting (Preprints).
Conference Location: Atlanta, Ga, USA
Conference Date: 1984 Mar 11-14
Source: American Institute of Chemical Engineers, National Meeting 1984 Winter.
Publ by AIChE, New York, NY, USA Pap 44e, 27p 1984
E.I. Conference No.: 05076
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0173171 *84-005080
NEW TECHNIQUES IN CHEMICAL SPILL CONTROL
BANNISTER, WILLIAM W. ; DOUGLAS CRAIG D.; CURBY WILLIAM A.; NDI KINGSLEY B.; KAN DAVID L.; WALSH STEVEN P.; DALTON WILLIAM J.
UNIV OF LOWELL,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P75 (18)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0095609 EIM8304-022820
PCB EQUIPMENT INVENTORY AND MANAGEMENT PLAN FOR STATE OF CALIFORNIA FACILITIES.
Woodyard, John P.; Hypnarowski, Paul; Tappa, Jerry
SCS Eng Inc, Long Beach, Calif, USA
Conference Title: Proceedings: 1981 PCB Seminar.
Conference Location: Dallas, Tex, USA
Conference Date: 1981 Dec 1-3
Source: Electric Power Research Institute (Report)
EPRI EL 2572.
Publ by EPRI, Palo Alto, Calif, USA p 3. 65-3. 90 1982
E.I. Conference No.: 01691
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0292602 EIM8505-024282
PERCEPTION OF RISK: A JOURNALIST'S PERSPECTIVE.
Omang, Joanne
Washington Post, Washington, DC, USA
Conference Title: Analysis of Actual Versus Perceived Risks (Proceedings of the Society for Risk Analysis International Workshop).
Conference Location: Washington, DC, USA
Conference Date: 1981 Jun 1-3
Source: Advances in Risk Analysis v 1.
Publ by Plenum Press, New York, NY, USA and London, Engl
p 267-271 1983
E.I. Conference No.: 04170
(EEM)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0289465 EIM8504-021145
PORTABLE MICROPROCESSOR-CONTROLLED INSTRUMENT FOR SENSING, IDENTIFYING, AND MONITORING GASEOUS CHEMICALS.
Stetter, J. R.; Zaromb, S.; Penrose, W. R.
Argonne Natl Lab, Energy & Environmental Systems Div, Argonne, IL, USA
Conference Title: Extended Abstracts, Fall Meeting - Electrochemical Society.
Conference Location: New Orleans, LA, USA
Conference Date: 1984 Oct 7-12
Source: Electrochemical Society Extended Abstracts v 84-2. Publ by Electrochemical Soc, Pennington, NJ, USA p 887-888 1984
E.I. Conference No.: 05699
(EEM)

****** SEE SECTION III-B FOR MORE DETAIL ******

0023877 EIM8207-005105
POSSIBILITIES OF CONTROLLING THERMIC DANGERS.
Christen, Rene
LONZA
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz P 5/379-5/38 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0173176 *84-005085
PRACTICAL APPLICATIONS OF CONVENTIONAL AERIAL PHOTOGRAPHY TO HAZARDOUS WASTE SPILL EVALUATION
COOK DAVID K.
ECOLOGY & ENV INC, NY,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, OCT 25-27, 83, P203 (9)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0313545 EIM8508-045225
PRACTICAL APPROACH TO EMERGENCY RELIEF SYSTEM (ERS) DESIGN FOR RUNAWAY CHEMICAL REACTIONS.
Fauske, Hans K.
Fauske & Associates Inc, Burr Ridge, IL, USA
Conference Title: 1985 Spring National Meeting
and Petro Expo '85 -American Institute of Chemical Engineers.
Conference Location: Houston, TX, USA
Conference Date: 1985 Mar 24-28
Source: American Institute of Chemical Engineers,
National Meeting 1985 Spring.
Publ by AIChE, New York, NY, USA Pap 55f, 15p 1985
E.I. Conference No.: 06737
(EEM)

****** SEE SECTION II-C FOR MORE DETAIL ******

0282821 EIM8503-014501
PRACTICAL UTILIZATION OF SAFETY ANALYSIS RESULTS.
Taylor, J. R.
Riso Natl Lab, Roskilde, Den
Conference Title: Occupational Accident Research,
Proceedings of the International Seminar.
Conference Location: Saltsjobaden, Swed

Conference Date: 1983 Sep 5-9
Source: Journal of Occupational Accidents v 6 n 1-3
Sep 1984 p 213-214 1984
E.I. Conference No.: 05560
(EEM)

******** SEE SECTION II-A FOR MORE DETAIL ********

0182193 *86-041388
PREVENTING ENVIRONMENTAL CONTAMINATION AT RETAIL FERTILIZER FACILITIES
LANG, SHEILA B. SOHIO CHEMICAL CO, OH,
FERTILIZER INST ENV SYM, KISSIMMEE, FL, OCT 24-26, 84, P307(13)
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******** SEE SECTION II-A FOR MORE DETAIL ********

087692 X
Proceedings of a Symposium on the Transport of Hazardous Materials, held in London on 8HDec. 15, 1977.
Inst. Civil Engrs.
London, U.K., Inst. Civil Engrs., 1979, 159pp.
ISSN 0-7277-00588
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******** SEE SECTION III-A FOR MORE DETAIL ********

0372412 EIM8603-019017
PROCESS MODIFICATIONS AND NEW CHEMICALS.
Burch, William M.
US EPA, Office of Toxic Substances, Washington, DC, USA
Conference Title: 1985 Annual Meeting - American Institute of Chemical Engineers.
Conference Location: Chicago, IL, USA

Conference Date: 1985 Nov 10-14
Source: Annual Meeting - American Institute of Chemical Engineers 1985.
Publ by AIChE, New York, NY, USA Pap 101a, 15p 1985
E.I. Conference No.: 07699
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0101136 EIM8304-028348
PROCESS SAFETY ANALYSIS: IDENTIFICATION OF INHERENT PROCESS-HAZARDS.
Husmann, C. A. W. A.; van de Putte, T.
Minist of Soc Aff & Employ, The Hague, Neth
Conference Title: Assessment of Major Hazards.
(EFCE Event No. 272)
Conference Location: Manchester, Engl
Conference Date: 1982 Apr 14-16
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 25.
Publ by Inst of Chem Eng (Symp Ser n 71), Rugby, Warwickshire, Engl p 285-290 1982
E.I. Conference No.: 01708
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0377249 EIM8604-023854
QUANTIFICATION OF HUMAN ERROR IN MAINTENANCE FOR PROCESS PLANT PROBABILISTIC RISK ASSESSMENT.
Williams, J. C.; Willey, J.
CEGB, Warrington, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24

Source: Institution of Chemical Engineers Symposium
Series n 93.
Publ by Inst of Chemical Engineers
(EFCE Publication Series n 42)
Rugby, Engl p 353-365 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0101133 EIM8304-028345
QUANTITATIVE ASSESSMENT AND RELIABILITY ENGINEERING OF MAJOR HAZARD PLANTS IN THE CONTEXT OF HAZARD CONTROL.
Lees, F. P.
Loughborough Univ of Technol, Leicestershire, Engl
Conference Title: Assessment of Major Hazards.
(EFCE Event No. 272)
Conference Location: Manchester, Engl
Conference Date: 1982 Apr 14-16
Source: EFCE Publication Series
(European Federation of Chemical Engineering) n 25.
Publ by Inst of Chem Eng (Symp Ser n 71)
Rugby, Warwickshire, Engl p 225-243 1982
E.I. Conference No.: 01708
(EEM)

****** SEE SECTION II-C FOR MORE DETAIL ******

0384642 EIM8605-031247
RECENT DEVELOPMENTS IN THE REGULATION OF INDUSTRIAL CHEMICALS UNDER TSCA.
Plamondon, Joseph; Keener, R. L.
Rohm & Haas Co, Philadelphia, PA, USA
Conference Title: Radcure '84: Conference Proceedings
(Eighth International Conference on Radiation Curing).
Conference Location: Atlanta, GA, USA
Conference Date: 1984 Sep 10-13

Source: Radiation Curing, Conference Proceedings 8th.
Publ by Assoc for Finishing Processes of SME,
Dearborn, MI, USA p 14. 22-14. 34 1984
E.I. Conference No.: 06224
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0041256 EIM8209-032871
RELEASE RATES OF HAZARDOUS CHEMICALS FROM A DAMAGED CARGO VESSEL.
Dodge, Franklin T.; Bowles, Edgar B.; White, Robert E.;
Flessner, Michael F.
Southwest Res Inst, San Antonio, Tex, USA
Conference Title: Control of Hazardous Material Spills:
Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA
Conference Date: 1980 May 13-15
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA
p 381-385 1980
E.I. Conference No.: 00199
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0131069 EIM8308-057924
RESPONSE MEASURES FOR CHEMICAL SPILLAGE.
Cormack, D.
Dep of Trade, Marine Pollution Control Unit, London, Engl
Conference Title: Conference Papers - MariChem 82,
4th International Conference and Exhibition on the
Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Amsterdam, Neth
Conference Date: 1982 Jun 22-24
Source: MariChem 82. Publ by Gastech Ltd,
Rickmansworth, Hertfordshire, Engl Sess 3, Pap 2, 9p 1982
E.I. Conference No.: 01857
(EEM)

****** SEE SECTION III-A FOR MORE DETAIL ******

0377248 EIM8604-023853
REVIEW OF HUMAN FACTORS IN RELIABILITY AND RISK ASSESSMENT.
Watson, I. A.
UKAEA, Systems Reliability Service, UK
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers Symposium Series n 93.
Publ by Inst of Chemical Engineers (EFCE Publication Series n 42), Rugby, Engl p 323-351 1985
E.I. Conference No.: 07832
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0274784 EIM8502-006464
RISK ANALYSIS IN THE PROCESS INDUSTRIES - AN ISGRA UPDATE.
Cox, A. P.; Holden, P. L.; Lowe, D. R. T.; Opschoor, G.
Shell Int Chemie Mij. BV, The Hague, Neth
Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).
Conference Location: Philadelphia, PA, USA
Conference Date: 1984 Aug 19-22
Source: American Institute of Chemical Engineers, National Meeting 1984 Summer.
Publ by AIChE, New York, NY, USA Pap n 4d, 13p 1984
E.I. Conference No.: 05700
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0023891 EIM8207-005120
RISK ANALYSIS FOR CHEMICAL PLANTS.
Jaeger, P.
Tec Ueberwach-Ver Rheinland, Ger
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2.
Publ by Swiss Soc of Chem Ind, Basle, Switz p 7/561-7/57 1980
E.I. Conference No.: 00129
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0335052 EIM8511-066732
RISK ASSESSMENT TECHNIQUES FOR EXPERIMENTALISTS.
Van Horn, David J.
Rohm & Haas Co, Research Lab, Spring House, PA, USA
Conference Title: Chemical Process Hazard Review. (Based on a symposium held at the 187th Meeting of the American Chemical Society.)
Conference Location: St. Louis, MO, USA
Conference Date: 1984 Apr 8-13
Source: ACS Symposium Series 274.
Publ by ACS, Washington, DC, USA p 23-31 1985
E.I. Conference No.: 06576
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0377251 EIM8604-023856
RISK ASSESSMENT MODEL APPLIED TO TRANSPORTATION PROBLEMS.
Harris, N. C.; Roodbol, H. G.
Technica Ltd, London, Engl
Conference Title: Assessment and Control of Major Hazards.
Conference Location: Manchester, Engl
Conference Date: 1985 Apr 22-24
Source: Institution of Chemical Engineers
Symposium Series n 93.
Publ by Inst of Chemical Engineers
(EFCE Publication Series n 42), Rugby, Engl p 389-395 1985
E.I. Conference No.: 07832
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0169356 *84-001289
RISK ASSESSMENT FOR THE TRANSPORT OF HAZARDOUS MATERIALS
DOOLEY, J. ; BURTON I.
UNIV OF TORONTO, CANADA
ROYAL SOCIETY OF CANADA/ET AL RISK ASSESSMENT &
PERCEPTION SYM, TORONTO, OCT 18-19, 82, P81 (9)
(ENV)

******** SEE SECTION I-D FOR MORE DETAIL ********

0260160 EIM8412-091990
RISK-BASED ANALYSIS OF A PETROLEUM REFINERY.
Arendt, J. S.; Campbell, D. J.; Casada, M. L.; Lorenzo, D. K.
JBF Associates Inc, Knoxville, Tenn, USA
Conference Title: American Institute of Chemical Engineers,
1984 Winter National Meeting (Preprints).
Conference Location: Atlanta, Ga, USA
Conference Date: 1984 Mar 11-14

Source: American Institute of Chemical Engineers, National Meeting 1984 Winter.
Publ by AIChE, New York, NY, USA Pap 43e, 24p 1984
E.I. Conference No.: 05076
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0302071 EIM8506-033751
ROLE OF A PHYSICIAN AT A HAZARDOUS MATERIAL RELEASE.
Edelman, Philip
Univ of California, Irvine Medical Cent, Regional Poison Control Cent, Orange, CA, USA
Conference Title: 1984 Hazardous Material Spills
Conference Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA
Conference Date: 1984 Apr 9-12
Source: Publ by Government Inst Inc, Rockville, MD, USA p 369-372 1984
E.I. Conference No.: 05911
(EEM)

****** SEE SECTION III-A FOR MORE DETAIL ******

0213036 EIM8406-044866
ROLE OF COMPUTERS IN U. S. COAST GUARD POLLUTION RESPONSE OPERATIONS.
Reiter, Gary A.; Farthing, John W.
US Coast Guard, Washington, DC, USA
Conference Title: Proceedings of the 1st Annual Hazardous Materials Management Conference.
Conference Location: Philadelphia, Pa, USA
Conference Date: 1983 Jul 12-14
Source: Publ by Tower Conference Management Co, Wheaton, Ill, USA p 52-54 1983
E.I. Conference No.: 04277
(EEM)

****** SEE SECTION III-B FOR MORE DETAIL ******

0041993 EIM8209-033608
ROLE OF NUMERICAL SIMULATION IN ANALYSIS OF GROUND-WATER QUALITY PROBLEMS.
Konikow, L. F.
US Geol Surv, Reston, Va, USA
Conference Title: Quality of Groundwater, Proceedings of an International Symposium.
Conference Location: Noordwijkerhout, Neth
Conference Date: 1981 Mar 23-27
Source: Studies in Environmental Science 17.
Publ by Elsevier Sci Publ Co, Amsterdam, Neth and New York, NY, USA p 823-836 1981
E.I. Conference No.: 00621
(EEM)

******** SEE SECTION I-B FOR MORE DETAIL ********

0384308 EIM8605-030913
SAFETY AND LOSS PREVENTION - INTERNATIONAL COMPARISONS.
Beveridge, G. S. G.; Waite, P. J.
Univ of Strathclyde, Glasgow, Scotl
Conference Title: Multi-Stream '85, Process Engineering Developments, The Subject Groups Symposium.
Conference Location: London, Engl
Conference Date: 1985 Apr 16-18
Source: Institution of Chemical Engineers Symposium Series n 94.
Publ by Inst of Chemical Engineers, Rugby, Engl p 247-256 1985
E.I. Conference No.: 07539
(EEM)

******** SEE SECTION II-E-4 FOR MORE DETAIL ********

0280736 EIM8503-012416
SAFETY ASPECTS OF ANALYZER HOUSE INSTALLATIONS.
Mostia, William L. Jr.
Amoco Chemicals Corp, Alvin, TX, USA
Conference Title: Productivity Through Control Technology,
Proceedings of the 1983 Joint Symposium.
Conference Location: Houston, TX, USA
Conference Date: 1983 Apr 18-21
Source: Publ by ISA, Research Triangle Park, NC, USA p 1-6 1983
E.I. Conference No.: 04408
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0385654 EIM8605-032259
SAFETY OF HYDROGEN AS A GROUND TRANSPORTATION FUEL.
Knowlton, R. E.
Chemetics Int Co, Vancouver, BC, Can
Conference Title: Cryogenic Processes and Equipment - 1984.
(Presented at The Fifth Intersociety Cryogenics Symposium,
The Winter Annual Meeting of The American Society of
Mechanical Engineers.)
Conference Location: New Orleans, LA, USA
Conference Date: 1984 Dec 9-14
Source: Publ by ASME, New York, NY, USA p 123-129 1984
E.I. Conference No.: 05854
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0324556 EIM8509-056236
SAFETY OF NATURAL GAS RETAIL STORAGE, REFUELING AND USE IN ROAD VEHICLES.
Hallett, Patrick H.; Heenan, J.
Transport Canada, Can
Conference Title: Proceedings of the Twenty-Second
Automotive Technology Development Contractors' Coordination Meeting.
Conference Location: Dearborn, MI, USA
Conference Date: 1984 Oct 29-Nov 2

Source: Proceedings - Society of Automotive Engineers P-155.
Publ by SAE, Warrendale, PA, USA p 81-88 1985
E.I. Conference No.: 06858
(EEM)

****** SEE SECTION I-A FOR MORE DETAIL ******

0173173 *84-005082
SOME OPERATING PROBLEMS ASSOCIATED WITH PERSONAL PROTECTION EQUIPMENT AT SPILL INCIDENTS
VANCHUK J.T.
MSA CANADA INC, ONTARIO,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, OCT 25-27, 83, P163 (18)
(ENV)

****** SEE SECTION III-B FOR MORE DETAIL ******

0173178 *84-005087
A SPILL HAZARD RANKING SYSTEM FOR CHEMICALS
STIVER, WARREN ; MACKAY DONALD
UNIV OF TORONTO, CANADA
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, OCT 25-27, 83, P261 (6)
(ENV)

****** SEE SECTION I-B FOR MORE DETAIL ******

0041255 EIM8209-032870
SPILLS: AN EVAPORATION/AIR DISPERSION MODEL FOR CHEMICAL SPILLS ON LAND.
Fleischer, Miguel T.
Shell Dev Co, Hoston, Tex, USA
Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA
Conference Date: 1980 May 13-15
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA p 375-380 1980
E.I. Conference No.: 00199
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0232037 EIM8408-063867
SPREADING AND DISPERSION OF SOLUBLE CHEMICALS SPILLED IN NAVIGABLE RIVERS.
Morrow, T. B.; Buckingham, J. C.; Dodge, F. T.
Southwest Research Inst, Div of Engineering & Material Science, San Antonio, Tex, USA
Conference Title: Modeling of Environmental Flow Systems. (Presented at the Winter Annual Meeting of the American Society of Mechanical Engineers.)
Conference Location: Boston, Mass, USA
Conference Date: 1983 Nov 13-18
Source: American Society of Mechanical Engineers, Fluids Engineering Division (Publication) FED v 8. Publ by ASME, New York, NY, USA p 77-78 1983
E.I. Conference No.: 03278
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0180188 *85-029361
A STUDY OF VAPOUR SPILL CONTROL TECHNOLOGY
BUIST I. A. ; SOLSBERG L. B.
S. L. ROSS ENV RESEARCH LTD, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P208(21)
(ENV)

****** SEE SECTION III-B FOR MORE DETAIL ******

0274785 EIM8502-006465
SUPERCRITICAL EXTRACTION: A NEW TECHNOLOGY INTRODUCES NEW HAZARDS.
Randhava, Ravi
Xytel Corp, M. Prospect, IL, USA
Conference Title: American Institute of Chemical Engineers,
1984 Summer National Meeting (Preprints).
Conference Location: Philadelphia, PA, USA
Conference Date: 1984 Aug 19-22
Source: American Institute of Chemical Engineers,
National Meeting 1984 Summer.
Publ by AIChE, New York, NY, USA Pap n 5a, 9p 1984
E.I. Conference No.: 05700
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

0302021 EIM8506-033701
SUPERFUND REMOVAL ACTION WITH EVALUATION OF SAFETY PROCEDURES.
Forrest, Robert G.; Worden, Mary Hellen; Perez, Dana Ryan
US EPA, Region VI, Dallas, TX, USA
Conference Title: 1984 Hazardous Material Spills Conference Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA
Conference Date: 1984 Apr 9-12
Source: Publ by Government Inst Inc, Rockville, MD, USA p 17-23 1984
E.I. Conference No.: 05911
(EEM)

****** SEE SECTION II-C FOR MORE DETAIL ******

0277727 EIM8502-009407
SUPPORTING DECISION MAKING AND PROBLEM SOLVING DURING RARE HIGH RISK EVENTS.
Embrey, D. E.; Humphreys, P. C.
Human Reliability Associates Ltd, Engl
Conference Title: Ergonomics Problems in Process Operations.
Conference Location: Birmingham, Engl
Conference Date: 1984 Jul 11-13
Source: Institution of Chemical Engineers Symposium Series n 90.
Publ by Inst of Chemical Engineers (EFCE Publ Series n 38), Rugby, Engl p 148-150 1984
E.I. Conference No.: 05959
(EEM)

****** SEE SECTION II-C FOR MORE DETAIL ******

0180204 *85-029389
A SURVEY OF COUNTERMEASURES SYSTEMS FOR HAZARDOUS MATERIAL SPILLS
SOLSBERG L. B.
HATFIELD CONSULTANTS LTD, CANADA,
ENV CANADA 2ND ANNUAL TECHNICAL CHEMICAL SPILLS SEMINAR,
TORONTO, FEB 5-7, 85, P391(4)
(ENV)

******** SEE SECTION III-B FOR MORE DETAIL ********

0131073 EIM8308-057928
TANK CONTAINER SAFETY: CONSIDERATIONS FOR A MORE RATIONAL APPROACH.
Gerhard, B.
Westerwaelder Eisenwerk Gerhard GmbH, Weitefeld, West Ger
Conference Title: Conference Papers - MariChem 82,
4th International Conference and Exhibition on the
Marine Transportation, Handling and Storage of Bulk Chemicals.
Conference Location: Amsterdam, Neth
Conference Date: 1982 Jun 22-24
Source: MariChem 82. Publ by Gastech Ltd,
Rickmansworth, Hertfordshire, Engl Sess 4, Pap 3, 15p 1982
E.I. Conference No.: 01857
(EEM)

******** SEE SECTION II-B FOR MORE DETAIL ********

TITLE: **Technical Seminar on Chemical Spills Proceedings (3rd)**
SOURCE: Technical Seminar on Chemical Spills, 3rd,
Montreal, Quebec, February 3-7, 1986
(LC)

1210804
Teleconferences on chemical accidents.
* Chemical & Engineering News June 24, 1985 p. 19
(PRO)

******** SEE SECTION II-D FOR MORE DETAIL ********

0023873 EIM8207-005101
TEST METHODS IN PROCESS SAFETY ANALYSIS.
Verhoeff, J.; Janswoude, J. J.
TNO, Rijswijk, Neth
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 5/323-5/34 1980
E.I. Conference No.: 00129
(EEM)

******** SEE SECTION II-A FOR MORE DETAIL ********

0366211 EIM8602-012816
THREE-LEVEL APPROACH TO CURRICULUM DEVELOPMENT FOR HAZARD COMMUNICATION TRAINING EMPLOYING THE WATCH (WORKPLACE ANALYSIS TO CONTROL HAZARDS) SYSTEM.
Corson, Lynn A.
Purdue Univ, Cent for Public Policy & Public Administration, West Lafayette, IN, USA
Conference Title: Proceedings of the Third Annual Hazardous Materials Management Conference.
(Held as part of the Hazardous Materials Management Conference & Exhibition.)
Conference Location: Philadelphia, PA, USA
Conference Date: 1985 Jun 4-6

Source: Proceedings of the Annual Hazardous Materials Management Conference 3rd.
Publ by Tower Conference Management Co, Wheaton, IL, USA
p 29-37 1985
E.I. Conference No.: 07549
(EEM)

******** SEE SECTION II-A FOR MORE DETAIL ********

0041220 EIM8209-032835
U. S. COAST GUARD'S APPROACH TO THE CHEMISTRY REQUIREMENTS FOR HAZARDOUS CHEMICAL SPILLS.
Bentz, Alan P.; Kleinberg, Gerd A.
US Coast Guard, Res & Dev Cent, Groton, Conn, USA
Conference Title: Control of Hazardous Material Spills: Proceedings of the 1980 National Conference.
Conference Location: Louisville, Ky, USA
Conference Date: 1980 May 13-15
Source: Publ by Vanderbilt Univ, Nashville, Tenn, USA
p 185-191 1980
E.I. Conference No.: 00199
(EEM)

0173174 *84-005083
U.S. EPA, ERT'S INITIAL AIR MONITORING GUIDES FOR CHEMICAL SPILLS
TURPIN RODNEY D.
EPA, NJ,
ENV CANADA 1ST TECHNICAL CHEMICAL SPILLS SEMINAR, TORONTO, OCT 25-27, 83, P181 (7)
(ENV)

******** SEE SECTION III-A FOR MORE DETAIL ********

0263496 EIM8412-095326
USE OF ACUTE TOXICITY DATA IN THE RISK ASSESSMENT OF THE EFFECTS OF ACCIDENTAL RELEASES OF TOXIC GASES.
Harris, N. C.; Moses, A. M.
Imperial Chemical Industries Ltd, Mond Div, Runcorn, Engl
Conference Title: 4th International Symposium on Loss Prevention and Safety Promotion in the Process Industries (EFCE Event n 290). (Volume 1: Safety in Operations and Processes.)
Conference Location: Harrogate, North Yorks, Engl
Conference Date: 1983 Sep 12-16
Source: Institution of Chemical Engineers Symposium Series n 80.
Publ by Inst of Chemical Engineers (EFCE Publ Series n 33), Rugby, Warwickshire, Engl.
Distributed by Pergamon Press, Oxford, Engl & New York, NY, USA p I36-I45 1983
E.I. Conference No.: 05523
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0221030 EIM8407-052860
USE OF HAZARD ASSESSMENT IN ASSESSING RISK.
Tyler, B. J.; Simmons, R. F.
Univ of Manchester Inst of Science & Technology, Dep of Chemistry, Manchester, Engl
Conference Title: INTERFLAM '82, International Conference on Flammability, Conference Workbook. ((Additional Abstracts).)
Conference Location: Guildford, Surrey, Engl
Conference Date: 1982 Mar 30-Apr 1
Source: p 203-206 1982
E.I. Conference No.: 04340
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0274783 EIM8502-006463
USE OF RISK ASSESSMENT IN THE CHEMICAL INDUSTRIES.
Freeman, Raymond A.
Monsanto Co, St. Louis, MO, USA
Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).
Conference Location: Philadelphia, PA, USA
Conference Date: 1984 Aug 19-22
Source: American Institute of Chemical Engineers, National Meeting 1984 Summer.
Publ by AIChE, New York, NY, USA Pap n 4c, 30p 1984
E.I. Conference No.: 05700
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0228419 EIM8408-060249
USE OF SYSTEMATIC HAZARD STUDIES IN A LARGE CHEMICAL COMPANY.
Harris, N. C.
Imperial Chemical Industries PLC, Mond Div, Runcorn, Cheshire, Engl
Conference Title: Proceedings - 32nd Canadian Chemical Engineering Conference.
Conference Location: Vancouver, BC, Can
Conference Date: 1982 Oct 3-6
Source: Proceedings - Canadian Chemical Engineering Conference 32nd v 3.
Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 1231-1237 1982
E.I. Conference No.: 03982
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0313566 EIM8508-045246
USE OF WATER SPRAY BARRIERS TO DISPERSE SPILLS OF HEAVY GASES.
Moodie, K.
Health & Safety Executive, Explosion & Flame Lab, Buxton, Engl
Conference Title: 1985 Spring National Meeting and Petro Expo '85 - American Institute of Chemical Engineers.
Conference Location: Houston, TX, USA
Conference Date: 1985 Mar 24-28
Source: American Institute of Chemical Engineers, National Meeting 1985 Spring.
Publ by AIChE, New York, NY, USA Pap 60a, 21p 1985
E.I. Conference No.: 06737
(EEM)

****** SEE SECTION III-A FOR MORE DETAIL ******

0116283 EIM8306-043133
USES AND LIMITATIONS OF ANALYTICAL METHODS IN HAZARD ASSESSMENT AND LOSS PREVENTION.
Cox, R. A.
Technica, Ltd, London, Engl
Conference Title: Developments '82. (Institution of Chemical Engineers Jubilee Symposium).
Conference Location: London, Engl
Conference Date: 1982 Apr 6-8
Source: EFCE Publication Series (European Federation of Chemical Engineering) n 21.
Publ by Inst of Chemical Engineers (Symposium Series n 73), Rugby, Warwickshire, Engl p B59-B73 1982
E.I. Conference No.: 02197
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0296246 EIM8505-027926
USES AND MISUSES OF THE POPULATION VULNERABILITY MODEL.
Gardenier, John S.; Colonna, Guy R.
US Coast Guard Headquarters, Washington, DC, USA
Conference Title: Computer Simulation in Emergency Planning, Proceedings of the Conference.
Conference Location: San Diego, CA, USA
Conference Date: 1983 Jan 27-29
Source: Simulation Series v 11 n 2 1983.
Publ by Soc for Computer Simulation, La Jolla, CA, USA
p 91-94 1983
E.I. Conference No.: 05295
(EEM)

******** SEE SECTION I-C FOR MORE DETAIL ********

0384311 EIM8605-030916
USING TASK ANALYSIS TO SPECIFY PLC SOFTWARE FOR BATCH PROCESSES.
Lihou, D. A.; Jackson, P. P.
Lihou Loss Prevention Services Ltd, UK
Conference Title: Multi-Stream '85, Process Engineering Developments, The Subject Groups Symposium.
Conference Location: London, Engl
Conference Date: 1985 Apr 16-18
Source: Institution of Chemical Engineers Symposium Series n 94.
Publ by Inst of Chemical Engineers, Rugby, Engl p 279-288 1985
E.I. Conference No.: 07539
(EEM)

******** SEE SECTION II-A FOR MORE DETAIL ********

0023883 EIM8207-005112
WHAT IS WRONG WITH RISK ANALYSIS?
Pilz, V.
Conference Title: 3rd International Symposium
on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind,
Basle, Switz p 6/448-6/45 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0023907 EIM8207-005136
WHY DO PEOPLE TAKE RISKS? A SIMPLE FEEDBACK MODEL.
Houston, D. E. L.
Imp Chem Ind Ltd
Conference Title: 3rd International Symposium
on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz
Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind,
Basle, Switz p 10/777-10/790 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION VII-A FOR MORE DETAIL ******

VII. INTERNATIONAL ASPECTS

VII. INTERNATIONAL ASPECTS

A. GENERAL:

0023855 EIM8207-005083
3RD INTERNATIONAL SYMPOSIUM ON LOSS PREVENTION AND SAFETY PROMOTION IN THE PROCESS INDUSTRIES.
Anon
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries. (European Federation of Chemical Engineering (228 Event).)
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Publ by Swiss Soc of Chem Ind, Basle, Switz 5 vol, 1822 p 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS—*Accident Prevention
Identifiers: LOSS PREVENTION; PROCESS INDUSTRIES; FIRES; EXPLOSIONS; HAZARDOUS CHEMICALS; SAFETY PROMOTION; HAZARD ANALYSIS; DUST EXPLOSIONS; RELIEF VENTING; INDUSTRIAL HYGIENE; EIREV
Classification Codes: 802 (Chemical Apparatus & Plants); 931 (Applied Physics); 914 (Safety Engineering); 502 (Mine & Quarry Equipment & Operations); 901 (Engineering Profession) 80 (CHEMICAL ENGINEERING); 93 (ENGINEERING PHYSICS); 91 (ENGINEERING MANAGEMENT); 50 (MINING ENGINEERING); 90 (GENERAL ENGINEERING)
(EEM)

TITLE: Bhopal: a People's view of Death, Their Right to Know and Live: a Reconstruction of the Gas Tragedy, Its background, and aftermath, from Press Reports and Local Information.
PUBLISHER: Bhopal : Eklavye.
DATE: 1985.
(LC)

0181708 *86-038774
THE BHOPAL INCIDENT: IMPLICATIONS FOR DEVELOPING COUNTRIES,
BOWONDER, B. ADMINISTRATIVE STAFF COLLEGE OF INDIA, INDIA,
ENVIRONMENTALIST, SUMMER 85, V5, N2, P89(9)
(ENV)

****** SEE SECTION II-A FOR MORE DETAIL ******

0023908 EIM8207-005137
COMPUTER-AIDED APPLICATION OF SAFETY LAW AND REGULATION.
Ohnishi, N.
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 10/791-10/803 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0161288 *83-000173
EUROPE FINALLY RESPONDS TO SEVESO,
MANNON JAMES H.
* CHEMICAL BUSINESS, OCT 18, 82, P41 (4)
(ENV)

****** SEE SECTION II-A FOR MORE DETAIL ******

0272580 EIM8501-004260
FUTURE HEALTH AND SAFETY TRAINING AND MANAGEMENT IN INDUSTRY.
Hawthorn, R.; Eng, P.
Industrial Accident Prevention Assoc, Toronto, Ont, Can
Conference Title: Proceedings - 33rd Canadian Chemical Engineering Conference 1983.
Conference Location: Toronto, Ont, Can Conference Date: 1983 Oct 2-5
Sponsor: Canadian Soc for Chemical Engineering, Ottawa, Ont, Can
Source: Proceedings - Canadian Chemical Engineering Conference 33rd v 2. Publ by Canadian Soc for Chemical Engineering, Ottawa, Ont, Can p 795-800 1983
CODEN: PCECE7
E.I. Conference No.: 04160
Language: English
(EEM)

****** SEE SECTION II-A FOR MORE DETAIL ******

1166617 PB86-122033/XAB
Health Aspects of Chemical Safety. Interim Document 17. Progress Report on the WHO (World Health Organization) European Regional Programme on Chemical Safety, January 1983-June 1984

World Health Organization, Copenhagen (Denmark). Regional Office for Europe.
Corp. Source Codes: 032694002
Sponsor: Commission of the European Communities, Luxembourg.
1984 136p
See also PB85-121358. Prepared in cooperation with Commission of the European Communities, Luxembourg.
Languages: English
NTIS Prices: PC A07/MF A01 Journal Announcement: GRAI8604
(NTIS)

****** SEE SECTION IV-B FOR MORE DETAIL ******

0023879 EIM8207-005108
HISTORICAL AND THEORETICAL APPROACHES TO THE PREDICTION OF HAZARD AND RISK.
Marshall, V. C.
Univ of Bradford, Engl
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/395-6/40 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

1479720 85004720
Information on the International Programme on Chemical Safety /UNEP/ILO/WHO/.
Mercier M
World Health Organization Headquarters, Geneva, Switzerland.
Geogr Med (HUNGARY) ,1984, 14 p344-59, ISSN 0300-807X
Journal Code: FN9
Languages: ENGLISH
Journal Announcement: 8501
Subfile: INDEX MEDICUS
Tags: Human

Descriptors: Environmental Health; *Environmental Pollutants--Adverse Effects (AE); Epidemiologic Methods; Food Additives--Adverse Effects (AE); *International Cooperation; Mutagenicity Tests; Neoplasms--Chemically Induced (CI); Pesticide Residues--Adverse Effects (AE); Research Support; Risk; United Nations; World Health Organization
(MED)

0173286 *84-005195
INTEGRATION OF THE ENVIRONMENT RESEARCH ACTION PROGRAMME INTO THE FRAMEWORK PROGRAMME FOR COMMUNITY SCIENTIFIC AND TECHNICAL ACTIVITIES 1984-1987,
KLOSE, A. ; ANGELETTI G.
CEC, BRUSSELS,
CEC (REIDEL) ANALYSIS OF ORGANIC MICROPOLLUTANTS IN WATER 3RD SYM, OSLO, SEP 19-21, 83, P320 (8)
(ENV)

****** SEE SECTION VI FOR MORE DETAIL ******

0161985 *83-000840
MARINE TRANSPORT AND HANDLING OF DANGEROUS SUBSTANCES,
WARDELMANN E. H.
IMCO
PRESENTED AT OECD CONTROL OF CHEMICALS IN IMPORTING COUNTRIES SYM, YUGOSLAVIA, APR 22-25, 81, P172 (13)
(ENV)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0023880 EIM8207-005109
METHODOLOGY PROBLEMS IN REPREDICTING ACCIDENTS WHICH HAVE ACTUALLY OCCURRED.
Jacobsen, Oliver Finn
Riso Natl Lab, Den
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/409-6/42 1980
E.I. Conference No.: 00129
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0103158 75-003107
PROMPT DETECTION AND TRACING OF OILS AND OTHER DETRIMENTAL CHEMICALS IN THE ENVIRONMENT,
JELTES R.
TNO, NETHERLANDS,
* WATER RESEARCH, NOV 74, V8, N11, P977 (11)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0274784 EIM8502-006464
RISK ANALYSIS IN THE PROCESS INDUSTRIES - AN ISGRA UPDATE.
Cox, A. P.; Holden, P. L.; Lowe, D. R. T.; Opschoor, G.
Shell Int Chemie Mij. BV, The Hague, Neth
Conference Title: American Institute of Chemical Engineers, 1984 Summer National Meeting (Preprints).
Conference Location: Philadelphia, PA, USA Conference Date: 1984 Aug 19-22
Source: American Institute of Chemical Engineers, National Meeting 1984 Summer. Publ by AIChE, New York, NY, USA Pap n 4d, 13p 1984
E.I. Conference No.: 05700
(EEM)

****** SEE SECTION I-D FOR MORE DETAIL ******

0384308 EIM8605-030913
SAFETY AND LOSS PREVENTION - INTERNATIONAL COMPARISONS.
Beveridge, G. S. G.; Waite, P. J.
Univ of Strathclyde, Glasgow, Scotl
Conference Title: Multi-Stream '85, Process Engineering Developments, The Subject Groups Symposium.
Conference Location: London, Engl Conference Date: 1985 Apr 16-18
Source: Institution of Chemical Engineers Symposium Series n 94. Publ by Inst of Chemical Engineers, Rugby, Engl p 247-256 1985
E.I. Conference No.: 07539
(EEM)

****** SEE SECTION II-E-4 FOR MORE DETAIL ******

0172419 *84-004328
SPILL OF METHYL PARATHION IN THE MEDITERRANEAN SEA: A CASE STUDY AT PORT-SAID, EGYPT,
BADAWY, MOHAMED I. ; EL-DIB MOHAMED A.; ALY OSAMA A.
NATL RESEARCH CENTER, CAIRO,
B ENV CONTAM & TOX, APR 84, V32, N4, P469 (9)
(ENV)

******** SEE SECTION I-A FOR MORE DETAIL ********

0121576 NIOSH-00146911
Toxic Chemicals And Public Protection
Anonymous
Toxic Substances Strategy Committee, Washington, D.C., 227 pages
May 1980
(OSH)

******** SEE SECTION II-E-4 FOR MORE DETAIL ********

023883 EIM8207-005112
WHAT IS WRONG WITH RISK ANALYSIS?
Pilz, V.
Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 6/448-6/45 1980
E.I. Conference No.: 00129
(EEM)

******** SEE SECTION I-D FOR MORE DETAIL ********

0023907 EIM8207-005136

WHY DO PEOPLE TAKE RISKS? A SIMPLE FEEDBACK MODEL.

Houston, D. E. L.
Imp Chem Ind Ltd

Conference Title: 3rd International Symposium on Loss Prevention and Safety Promotion in the Process Industries.
Conference Location: Basle, Switz Conference Date: 1980 Sep 15-19
Sponsor: Eur Fed of Chem Eng; Swiss Soc of Chem Ind, Basle, Switz
Source: Prepr v 2. Publ by Swiss Soc of Chem Ind, Basle, Switz p 10/777-10/790 1980
E.I. Conference No.: 00129
Language: English

Descriptors: *CHEMICAL PLANTS--*Accident Prevention
Identifiers: BASIC FEEDBACK THEORY; LEARNING CHARACTERISTICS; RISK DESENSITIZATION; DYNAMICS; HAZARD REDUCTION STRATEGIES; COST BENEFIT ANALYSIS; HAZARDS
Classification Codes: 802 (Chemical Apparatus & Plants); 914 (Safety Engineering) 80 (CHEMICAL ENGINEERING); 91 (ENGINEERING MANAGEMENT)
(EEM)

VII. INTERNATIONAL ASPECTS

B. COUNTRY SPECIFIC:

0182046 86-040598
AMERICA'S TOXIC TREMORS,
STARR, MARK ; ET AL, ; HAGER, MARY ; FRIDAY, CAROLYN ; COOK, WILLIAM J.
* NEWSWEEK, AUG 26, 85, V106, N9, P18(2)
(ENV)

******** SEE SECTION IV-A FOR MORE DETAIL ********

TITLE: Avoiding Future Bhopals.
AUTHOR: Bowonder, B., Kasperson, Jeanne X., Kasperson, Roger E.
* SOURCE: Environment, Vol. 27, Sept. 1985: 6-13, 31-37.
(LC)

******** THIS ENTRY ALSO APPEARS IN SECTION VI-A ********

TITLE: Bhopal: A People's View of Death, Their Right to Know and Live: A Reconstruction of the Gas Tragedy, Its background, and aftermath, from Press Reports and Local Information.
PUBLISHER: Bhopal : Eklavya.
DATE: 1985.
(LC)

******** THIS ENTRY ALSO APPEARS IN SECTION II-D ********

TITLE: Bhopal Gas Tragedy: Delhi Science Forum Report.
PUBLISHER: New Delhi : Society for Delhi Science Forum.
DATE: 1984.
(LC)

******** THIS ENTRY ALSO APPEARS IN SECTION IV-B ********

0181708 *86-038774
THE BHOPAL INCIDENT: IMPLICATIONS FOR DEVELOPING COUNTRIES,
BOWONDER, B. ADMINISTRATIVE STAFF COLLEGE OF INDIA, INDIA,
ENVIRONMENTALIST, SUMMER 85, V5, N2, P89(9)
(ENV)

******** SEE SECTION II-A FOR MORE DETAIL ********

TITLE: Bhopal: Its Setting, Responsibility, and Challenge.
AUTHOR: Sufrin, Sidney C.
PUBLISHER: Delhi : Ajanta Publications : Distributors, Ajanta Books International.
DATE: 1985.
(LC)

******** THIS ENTRY ALSO APPEARS IN SECTION IV ********

0176251 *85-005895
BHOPAL: THE ENDLESS AFTERSHOCKS,
* CHEMICAL WEEK, DEC 19, 84, V135, N25, P33(5)
(ENV)

******** SEE SECTION I-A FOR MORE DETAIL ********

TITLE: The Bhopal Tragedy: Social and Legal Issues: A Symposium.
SOURCE: Texas International Law Journal, Vol. 20, 1985: 267-339.
NOTES: These aritcles were initially prepared for a colloquium held at the University of Texas School of Law on Feb. 6, 1985.
(LC)

TITLE: A Cloud Over Bhopal : Causes, Consequences, and Constructive Solutions.
AUTHOR: De Grazia, Alfred
PUBLISHER: Bombay ; New York : Published by Kalos Foundation for the India-America Committee for the Bhopal Victims : Popular Prakashan ; Distributor.
DATE: 1985
(LC)

0302054 EIM8506-033734
DEVELOPMENT OF IMPROVED COUNTERMEASURES FOR CHEMICAL SPILLS IN CANADA.
Fingas, Mervin F.
Environment Canada, Environmental Emergencies Technology Div, Ottawa, Ont, Can
Conference Title: 1984 Hazardous Material Spills Conference Proceedings: Prevention, Behavior, Control and Cleanup of Spills and Waste Sites.
Conference Location: Nashville, TN, USA Conference Date: 1984 Apr 9-12
Source: Publ by Government Inst Inc, Rockville, MD, USA p 255-260 1984
E.I. Conference No.: 05911
(EEM)

****** SEE SECTION I-B FOR MORE DETAIL ******

0178212 *85-016403
ETHYLENE DICHLORIDE/ETHYLENE GLYCOL SPILL IN A MAJOR WATER RESOURCE IN BRITISH COLUMBIA,
CHRISTIAN KENNETH L. ; MOOREHEAD WILLIAM P.
* J ENV HEALTH, JAN-FEB 85, V47, N4, P192(5)
(ENV)

****** SEE SECTION III-A FOR MORE DETAIL ******

0313609 EIM8508-045289
FIRST THOUGHTS ON SOME OF THE WIDER QUESTIONS RAISED BY BHOPAL.
Kletz, Trevor A.
Loughborough Univ of Technology, Dep of Chemical Engineering, Loughborough, Engl
Conference Title: 1985 Spring National Meeting and Petro Expo '85 - American Institute of Chemical Engineers.
Conference Location: Houston, TX, USA Conference Date: 1985 Mar 24-28
Source: American Institute of Chemical Engineers, National Meeting 1985 Spring. Publ by AIChE, New York, NY, USA Pap 72a, 6p 1985
E.I. Conference No.: 06737
(EEM)

****** SEE SECTION I-A FOR MORE DETAIL ******

0180740 *86-033393
THE IMPLICATIONS OF THE INDUSTRIAL DISASTER IN BHOPAL, INDIA,
* HSE COMM FOREIGN AFFAIRS HEARINGS 98 CON 2, DEC 12, 84 (80)
(ENV)

******** SEE SECTION II-E-3 FOR MORE DETAIL ********

0181774 *86-039078
REPORT FROM BHOPAL,
D'MONTE, DARRYL
* SIERRA, NOV-DEC 85, V70, N6, P14(5)
(ENV)

******** SEE SECTION II-E-3 FOR MORE DETAIL ********

TITLE: Seveso: Lessons from an Escape.
SOURCE: Economist, Vol. 267, June 17, 1978: 101-102, 104-106, 108.
(LC)

******** THIS ENTRY ALSO APPEARS IN SECTION III-A ********

0176244 *85-005887
THE STATES' LUKEWARM RESPONSE TO BHOPAL,
RICH LAURIE A. ; MALONE SHERRY; SCHWARTZ JAMES; GIBB ROBINA
* CHEMICAL WEEK, FEB 20, 85, V136, N8, P26(3)
(ENV)

******** SEE SECTION II-E-4 FOR MORE DETAIL ********

79-04868
The Swiss Emergency Organization for Nuclear and Chemical accidents.
Brunner, H.; Winiger, P.
Eidgenoessisches Institut fuer Reaktorforschung, Health Physics Div., CH-5303 Wuerenlingen, Switz.
Symposium on the handling of radiation accidents Vienna, Austria Feb. 28-Mar. 4, 1977
Handling of radiation accidents 1977. IAEA Proceedings Series. Subject Group: II. Nuclear Safety and Environmental Protection/Radiological Safety
pp. 291-300 Publ.Yr: 1977
Publ: Vienna International Atomic Energy Agency
illus. refs. (Some in Ger.)
Abs.
Languages: ENGLISH
Doc Type: CONFERENCE PAPER
(POL)

****** SEE SECTION II-C FOR MORE DETAIL ******

0156309 *82-002131
THE TIME-BOMB ON LONDON'S DOORSTEP,
PEARCE FRED
* NEW SCIENTIST, NOV 5, 81, V92, N1278, P362 (4)
(ENV)

****** SEE SECTION II-C FOR MORE DETAIL ******

942240
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Chemistry & Industry August 1, 1983 p. 575
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****** SEE SECTION III-B FOR MORE DETAIL ******

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******** SEE SECTION II-A FOR MORE DETAIL ********

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******** SEE SECTION III-A FOR MORE DETAIL ********