NUREG-0304
Vol. 9, No. 1

Regulatory and Technical Reports

Compilation for
First Quarter 1984
January - March

U.S. Nuclear Regulatory Commission

Office of Administration

Available from

NRC/GPO Sales Program

Superintendent of Documents
Government Printing Office
Washington, D. C. 20402

A year's subscription consists of 4 issues for
this publication.

Single copies of this publication
are available from National Technical
Information Service, Springfield, VA 22161

Microfiche of single copies are
available from NRC/GPO Sales Program
Washington, D. C. 20555

NUREG-0304
Vol. 9, No. 1

Regulatory and Technical Reports

Compilation for
First Quarter 1984
January - March

Date Published: May 1984

Division of Technical Information and Document Control
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

CONTENTS

PREFACE

This compilation consists of bibliographic data and abstracts for the formal regulatory and technical reports issued by the U.S. Nuclear Regulatory Commission (NRC) Staff and its contractors. It is NRC's intention to publish this compilation quarterly and to cumulate it annually. Your comments will be appreciated. Please send them to:

Division of Technical Information
  and Document Control
Policy and Publications Management Branch
Publishing and Translations Section
Woodmont 501
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The main citations and abstracts in this compilation are listed in NUREG number order: NUREG-XXXX, NUREG/CP-XXXX, and NUREG/CR-XXXX. These precede the following indexes:

Contractor Report Number Index
Personal Author Index
Subject Index
NRC Originating Organization Index (Staff Reports)
NRC Contract Sponsor Index (Contractor Reports)
Contractor Index
Licensed Facility Index

A detailed explanation of the entries precedes each index.

The bibliographic elements of the main citations are the following:

Staff Report

NUREG-0508: MARK II CONTAINMENT PROGRAM EVALUATION AND ACCEPTANCE CRITERIA. ANDERSON, C.J. Division of Safety Technology. August 1981. 90 pp. 8109140048. 09570:200.

Where the entries are (1) report number, (2) report title, (3) report author, (4) organizational unit of author, (5) date report was published, (6) number of pages in the report, (7) the NRC Document Control System accession number, (8) the microfiche address (for internal NRC use).

Conference Report

NUREG/CP-0017: EXECUTIVE SEMINAR ON THE FUTURE ROLE OF RISK ASSESSMENT AND RELIABILITY ENGINEERING IN NUCLEAR REGULATION. JANERP, J.S. Argonne National Laboratory. May 1981. 141 pp. 8105280299. ANL-81-3. 08632:070.

Where the entries are (1) report number, (2) report title, (3) report author, (4) organization that compiled the proceedings, (5) date report was published, (6) number of pages in the report, (7) the NRC Document Control System accession number, (8) the report number of the originating organization, (9) the microfiche address (for NRC internal use).

Contractor Report

NUREG/CR-1556: STUDY OF ALTERNATE DECAY HEAT REMOVAL CONCEPTS FOR LIGHT WATER REACTORS-CURRENT SYSTEMS AND PROPOSED OPTIONS. BERRY, D.L.; BENNETT, P.R. Sandia Laboratories. May 1981. 100 pp. 8107010449. SAND80-0929. 08912:242.

Where the entries are (1) report number, (2) report title, (3) report authors, (4) organizational unit of authors or publisher, (5) date report was published, (6) number of pages in the report, (7) the NRC Document Control System accession number, (8) the report number of the originating organization (if given), and (9) the microfiche address (for NRC internal use).

The following abbreviations are used to identify the document status of a report:

ADD - addendum
APP - appendix
DRFT - draft
ERR - errata
N - number
R - revision
S - supplement
V - volume

Availability of NRC Publications

Copies of NRC staff and contractor reports may be purchased either from the NRC-GPO Sales Office or from the National Technical Information Service, Springfield, Virginia 22161. To purchase documents from the NRC-GPO Sales Office send a check or money order, payable to the Superintendent of Documents, to the following address:

U.S. Nuclear Regulatory Commission
ATTN: Sales Manager
Washington, D.C. 20555

You may charge any purchase to your GPO Deposit Account, Master Charge card, or VISA charge card by calling the NRC-GPO Sales Office on (301) 492-9530. Non-U.S. customers must make payment in advance either by International Postal Money Order, payable to the Superintendent of Documents, or by draft on a United States or Canadian bank, payable to the Superintendent of Documents.

NRC Report Codes

The NUREG designation, NUREG-XXXX, indicates that the document is a formal NRC staff-generated report. Contractor-prepared formal NRC reports carry the report code NUREG/CR-XXXX. This type of identification replaces contractor established codes such as ORNL/NUREG/TM-XXX and TREE-NUREG-XXXX, as well as various other numbers that could not be correlated with NRC sponsorship of the work being reported.

In addition to the NUREG and NUREG/CR codes, NUREG/CP is used for NRC-sponsored conference proceedings.

All these report codes are controlled and assigned by the NRC Division of Technical Information and Document Control.

Main Citations and Abstracts

The report listings in this compilation are arranged by report number, where NUREG-XXXX is an NRC staff originated report, NUREG/CP-XXXX is an NRC sponsored conferance report, and NUREG/CR-XXXX is an NRC contractor-prepared report. The bibliographic information (see Preface for details) is followed by a brief abstract of the report.

NUREG-0020 V07 N11: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of October 31, 1983. (Grey Book) * Management Information Branch. January 1984. 408pp. 8402060291. 22105:267.

The Operating Units Status Report - Licensed Operating Reactors provides data on the operation of nuclear units as timely and accurately as possible. This information is collected by the Office of Resource Management from the Headquarters staff of NRC's Office of Inspection and Enforcement, from NRC's Regional Offices, and from utilities. The three sections of the report are: monthly highlights and statistics for commercial operating units, and errata from previously reported data; a compilation of detailed information on each unit, provided by NRC's Regional Offices, IE Headquarters and the utilities; and an appendix for miscellaneous information such as spent fuel storage capability, reactor-years of experience and non-power reactors in the U.S. It is hoped the report is helpful to all agencies and individuals interested in maintaining an awareness of the U.S. energy situation as a whole.

NUREG-0020 V07 N12: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Grey Book) * Management Information Branch. February 1984. 379pp. 8402210078. 22320:313.

See NUREG-0020, V07, N11 abstract.

NUREG-0020 V08 N01: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of December 31, 1983. (Grey Book) * Management Information Branch. February 1984. 396pp. 8403150058. 22647:001.

See NUREG-0020, V07, N11 abstract.

NUREG-0020 V08 N02: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of January 31, 1984. (Grey Book) * Management Information Branch. March 1984. 22pp. 8404160205. 24063:341.

See NUREG-0020, V07, N11 abstract.

NUREG-0040 V07 N04: LICENSEE CONTRACTOR AND VENDOR INSPECTION STATUS REPORT. Quarterly Report, October 1983 - December 1983. (White Book) * Region 4, Office of Director. January 1984. 190pp. 8402170320.

22303:001.

This periodical covers the results of inspections performed by the NRC's Vendor Program Branch that have been distributed to the inspected organizations during the period from October 1983 through December 1983. Also included in this issue are the results of certain inspections performed prior to October 1983 that were not included in previous issues of NUREG-0040.

NUREG-0304 V08 N04: REGULATORY AND TECHNICAL REPORT. Annual Compilation For 1983. * Division of Technical Information & Document Control. February 1984. 569pp. 8403070401. 22554:217.

This compilation lists all NRC regulatory and technical reports published under the NUREG series during 1983.

NUREG-0325 R06: U.S. NUCLEAR REGULATORY COMMISSION FUNCTIONAL ORGANIZATION CHARTS. BARRY,L.W. Office of Resource Management, Director. January 1984. 63pp. 8401310461. 22042:349.

Functional organization charts for the NRC Commission Offices, Divisions, Staffs, and Branches are presented.

NUREG-0430 V04 N01: LICENSED FUEL FACILITY STATUS REPORT. Inventory Difference Data. January 1983 - June 1983. (Grey Book) * Director's Office, Office of Inspection and Enforcement. March 1984. 14pp. 8403220189. 22721:097.

NRC is committed to the periodic publication for licensed fuel facilities inventory difference data, following agency review of the information and completion of any related NRC investigations. Information in this report includes inventory difference data for active fuel fabrication facilities possessing more than one effective kilogram of high enriched uranium, plutonium, or Uranium-235.

NUREG-0485 V05 N11: SYSTEMATIC EVALUATION PROGRAM, STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Buff Book) * Office of Resource Management, Director. January 1984. 75pp. 8401200362. 21872:003.

The Systematic Evaluation Program is intended to examine many safety-related aspects of 11 of the older light water reactors. This document provides the existing status of the review process including individual topic and overall completion status.

NUREG-0519 S08: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF LA SALLE COUNTY STATION, UNITS 1 AND 2. Docket Nos. 50-373 And 50-374. (Commomwealth Edison Company) * Division of Licensing. March 1984. 30pp. 8404090036. 22947:282.

Supplement No. 8 to the Safety Evaluation Report of Commonwealth Edison Company's application for a license to operate its La Salle County Station, Unit 2, located in Brookfield Township, La Salle County, Illinois, has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission. This supplement is to update our evaluations on Unit 2 issues identified in the previous Safety Evaluation Report and Supplements that need resolution prior to issuance of the full power operating license for Unit 2.

NUREG-0525 R08: SAFEGUARDS SUMMARY EVENT LIST (SSEL). * Division of Safeguards. March 1984. 72pp. 8404050493. 22915:177.

The Safeguards Summary Event List (SSEL) provides brief summaries of several hundred safeguards-related events involving nuclear material or facilities regulated by the U.S. Nuclear Regulatory Commission (NRC). Events are described under the categories of bomb-related, intrusion, missing/allegedly stolen, transportation, tampering/vandalism, arson, firearms-related, radiological sabotage and miscellaneous. The information contained in the event descriptions is derived primarily from official NRC reporting channels.

NUREG-0540 V05 N11: TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. November 1-30, 1983. * Division of Technical Information & Document Control. January 1984. 587pp. 8402210016. 22324:001.

This document is a monthly publication containing descriptions of information received and generated by the U.S. NRC. This information includes (1) docketed material associated with civilian nuclear power plants and other uses of radioactive materials, and (2) nondocketed material received and generated by NRC pertinent to its role as a regulatory agency. The following indexes are included: Personal Author Index, Corporate Source Index, Report Number Index and Cross Reference to Principal Documents Index.

NUREG-0540 V05 N12: TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. December 1-31, 1983. * Division of Technical Information & Document Control. March 1984. 538pp. 8403260289. 22762:001.

See NUREG-0540, V05, N11 abstract.

NUREG-0580 V12 N12: REGULATORY LICENSING STATUS SUMMARY REPORT. Data As Of December 31, 1983. (Blue Book) * Management Information Branch. January 1984. 60pp. 8402100442. 22213:049.

Provides a review of the status of the progress of the licensing reviews for all construction permits, operating licenses, special projects and non-power reactor renewals under review, as reported to Congress.

NUREG-0606 V06 N01: UNRESOLVED SAFETY ISSUES SUMMARY. Data As Of February 17, 1984. (Aqua Book) * Management Information Branch. February 1984. 55pp. 8403230212. 22743:294.

Provides an overview of the status of the generic tasks addressing "Unresolved Safety Issues" as reported to Congress.

NUREG-0647: SAFETY EVALUATION AND ENVIRONMENTAL ASSESSMENT, THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2. Docket No. 50-320. (Metropolitan Edison Company, Jersey Central Power And Light Company And Pennsylvania Electric Company) * Office of Nuclear Reactor Regulation, Director. February 1980. 24pp. 8401270427. 22002:246.

This report contains an order for the Three Mile Island Nuclear Station, Unit 2, issued by the NRC. The order requires that effective immediately, the facility be maintained in accordance with the requirements of the attached proposed Technical Specifications and (2) proposes to formally amend the Facility Operating License to include the proposed Technical Specifications, taking into account the present account of the plant systems, so as to ensure that the unit will remain in a safe posture during the Recovery Mode.

NUREG-0675 S17: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2. Docket Nos. 50-275 And 50-323. (Pacific Gas And Electric Company) * Division of Licensing. February 1984. 22pp. 8403070104. 22561:214.

Supplement No. 17 to the Safety Evaluation Report for Pacific Gas and Electric Company's application for licenses to operate the Diablo Canyon Nuclear Power Plant (Docket Nos. 50-275 and 50-323) located in San Luis Obispo County, California has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission. This supplement updates the Safety Evaluation Report by providing additional information on the breakwater issue.

NUREG-0675 S22: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF DIABLO CANYON NUCLEAR POWER PLANT, Units 1 AND 2. Docket Nos. 50-275 And 50-323. (Pacific Gas and Electric Company) * Division of Licensing. March 1984. 400pp. 8403300300. 22843:001.

Supplement No. 22 to the Safety Evaluation Report for Pacific Gas and Electric Company's application for licenses to operate the Diablo Canyon Nuclear Power Plant (Docket Nos. 50-275 and 50-323), located in San Luis Obispo County, California, has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission. This supplement provides information on the Commission's review of allegations and concerns about the design, construction and operation of Diablo Canyon identified to the NRC as of March 9, 1984. It includes the criteria that were used by the NRC to determine which of the allegations that have been evaluated thus far must be resolved prior to Unit 1 achieving criticality and operating at power levels up to 5 percent of rated power (i.e., low power operation).

NUREG-0698 R02: NRC PLAN FOR CLEANUP OPERATIONS AT THREE MILE ISLAND UNIT 2. MASNIK, M.T.; SNYDER, B.J. TMI Program Office. March 1984. 40pp. 8404100141. 22995:027.

This report updates a plan that defines NRC's role in cleanup operations at Three Mile Island Unit 2 (TMI-2) and outlines NRC's regulatory responsibilities in fulfilling this role.

Since the initial issuance of this NRC Plan in July 1980, this office has issued the Final NRC Programmatic Evironmental Impact Statement (PEIS) related to the entire TMI-2 cleanup and a draft Supplement to the PEIS related to occupational radiation exposure. Additionally, a number of developments have occurred which will have an impact on the course of cleanup operations. This revision provides a discussion of these developments, specifically in the areas of the functional role of the NRC in cleanup operations, the cleanup schedule, and the current status of the cleanup. The plan also discusses NRC's perceived role in future cleanup activities. Because of major uncertainties in the funding of the cleanup, portions of this plan, including the estimated schedule, are likely to require further changes as availability of funding and other factors affect the pace of the cleanup.

NUREG-0732 R01: ANSWERS TO FREQUENTLY ASKED QUESTIONS ABOUT CLEANUP ACTIVITIES AT THREE MILE ISLAND, UNIT 2. * TMI Program Office. March 1984. 55pp. 8404130056. 24049:001.

This question-and-answer report provides answers in nontechnical language to frequentlu asked questions about the status of cleanup activities at Three Mile Island, Unit 2. This revision updates answers first prepared in 1981, shortly after the cleanup got under way.

NUREG-0748 V03 N11: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of November 30, 1983. (Orange Book) * Division of Data Automation & Management Information. January 1984. 336pp. 8401260119. 21968:312.

The Operating Reactors Licensing Actions Summary a monthly publication designed to provide the Management of the Nuclear Regulatory Commission (NRC) with an overview of licensing actions dealing with operating power and nonpower reactors.

NUREG-0748 V03 N12: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of December 31, 1983. (Orange Book) * Division of Data Automation & Management Information. January 1984. 335pp. 8402060497. 22108:039.

See NUREG-0748, V03, N11 abstract.

NUREG-0748 V04 N01: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of January 31, 1984. (Orange Book) * Division of Data Automation & Management Information. March 1984. 332pp. 8403270269. 22788:001.

See NUREG-0748, V03, N11 abstract.

NUREG-0750 V16 B01: NUCLEAR REGULATORY COMMISSION ISSUANCES. July - September 1982. Pages 1-1,218. * Division of Technical Information & Document Control. September 1982. 1220. 8402170121. 22306:001.

Legal issuances of the Atomic Safety and Licensing Board and Appeal Panels, the Commission, the Administrative Law Judge, and NRC Program Offices.

NUREG-0750 V16 B02: NUCLEAR REGULATORY COMMISSION ISSUANCES. October-December 1982. Pages 1,219-2,140. * Division of Technical Information & Document Control. December 1982. 960pp. 8402170060. 22309:264.

See NUREG-0750, V16, B01 abstract.

NUREG-0750 V18 I01: INDEXES TO NUCLEAR REGULATORY COMMISSION ISSUANCES. July-September 1983. * Division of Technical Information & Document Control. September 1983. 85pp. 8404110317. 24007:101.

See NUREG-0750, V16, B01 abstract.

NUREG-0750 V18 N03: NUCLEAR REGULATORY COMMISSION ISSUANCES. September 1983. Pages 299-742. * Division of Technical Information & Document Control. September 1983. 451pp. 8402280257. 22503:301.

See NUREG-0750, V16, B01 abstract.

NUREG-0750 V18 N04: NUCLEAR REGULATORY COMMISSION ISSUANCES. October 1983. Pages 743-1,137. * Division of Technical Information & Document Control. October 1983. 400pp. 8403230183. 22813:040.

See NUREG-0750, V16, B01 abstract.

NUREG-0750 V18 NO5: NUCLEAR REGULATORY COMMISSION ISSUANCES. November 1983. Pages 1,139-1,301. * Division of Technical Information & Document Control. November 1983. 167pp. 8404130221. 24036:175.
See NUREG-0750,V16,B01 abstract.

NUREG-0775: FINAL ENVIRONMENTAL STATEMENT RELATED TO THE OPERATION OF COMANCHE PEAK STEAM ELECTRIC STATION,UNIT NOS. 1 AND 2. Docket Nos. 50-445 And 50-446.(Texas Utilities Generating Company) * Office of Nuclear Reactor Regulation, Director. September 1981. 160pp. 8401270428. 22001:143.

The information in this Final Environmental Statement is the second assessment of the environmental impact associated with the construction and operation of the Comanche Peak Steam Electric Station, Units 1 and 2, located at a site on Squaw Creek Reservoir in Somervell County, Texas. The Station will be operated by the Texas Utilities Generating Company. The Draft Environmental Statement related to the operation of the station was issued May 14,1981. The first assessment was the Final Environmental Statement related to the proposed station and was issued in June 1974, prior to issuance of the construction permits in December 1974. The present assessment is the result of the NRC staff review of the activities associated with the proposed operation of the station, and includes the staff response to comments on the Draft Environmental Statement.

NUREG-0776 S06: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF SUSQUEHANNA STEAM ELECTRIC STATION,UNITS 1 AND 2. Docket Nos. 50-387 And 50-388.(Pennsylvania Power And Light Company; Allegheny Electric Cooperative,Incorporated) * Division of Licensing. March 1984. 100pp. 8404110036. 24002:123.

In April 1981, the staff of the Nuclear Regulatory Commission issued its Safety Evaluation Report (NUREG-0776) regarding the application of the Pennsylvania Power and Light Company (applicant or licensee) and the Allegheny Electric Cooperative, Inc. (co-applicant) for licenses to operate the Susquehanna Steam Electric Station, Units 1 and 2, located on a site in Luzerne County, Pennsylvania.

Supplements 1 and 2 were issued in June 1981 and September 1981, respectively and addressed several outstanding issues. Supplement No. 2 also contains NRC staff responses to the comments made by the Advisory Committee on Reactor Safeguards in its report, dated August 11, 1981. Supplement 3 was issued in July 1982 and addressed five items that remained open and closed them out. On July 17, 1982, Operating License NPF-14 was issued to allow Unit 1 operation at power levels not to exceed 5% of rated power. Supplement 4 was issued November 1982 and discusses the resolution of several license conditions. On November 12, 1982, Operating License NPF-14 was amended to remove the 5% power restriction, thereby permitting full-power operation of Unit 1. Supplement 5 and this Supplement, No. 6 addresses several isssues that require resolution before licensing operation of Unit 2.

NUREG-0800 07.1 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.1,Revision 1 To Appendix A. * Office of Nuclear Reactor Regulation, Director. March 1984. 24pp. 8404180395. 24109:060.

Revision No. 3 to Section 7.1 of the Standard Review Plan incorporates changes that have been developed since the original issuance in July 1981. This revision incorporates the resolution of

Generic Issues 45, "Inoperability of Instrumentation Due to Extreme Cold Weather."

NUREG-0800 07.5 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.5. * Office of Nuclear Reactor Regulation, Director. March 1984. 8pp. 8404180397. 24109:052.

Revision 3 to Section 7.5 of the Standard Review Plan incorporates changes that have been developed since the original issuance in July 1981. This revision incorporates the resolution of Generic Issue 45, "Inoperability of Instrumentation Due to Extreme Cold Weather."

NUREG-0800 07.7 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.7. * Office of Nuclear Reactor Regulation, Director. March 1984. 7pp. 8404180399. 24109:045.

Revision No. 3 to Section 7.7 of the Standard Review Plan incorporates changes that have been developed since the original issuance in July 1981. This revision incorporates the resolution of Generic Issue 45, "Inoperability of Instrumentation Due to Extreme Cold Weather."

NUREG-0837 V03 N03: NRC TLD DIRECT RADIATION MONITORING NETWORK. Progress Report, July-September 1983. COSTELLO, F.; THOMPSON, T.; COHEN, L.; et al. Region 1, Office of Director. March 1984. 138pp. 8404020212. 22877:245.

This report provides the status and results of the NRC Thermoluminescent Dosimeter (TLD) Direct Radiation Monitoring Network. It presents the radiation levels measured in the vicinity of NRC licensed facility sites throughout the country for the third quarter of 1983.

NUREG-0847 S02: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2. Docket Nos. 50-390 And 50-391. (Tennessee Valley Authority) * Division of Licensing. January 1984. 39pp. 8402100502. 22213:109.

This report supplements the Safety Evaluation Report, NUREG-0847 (June 1982) and Supplement No. 1 (September 1982), issued by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission with respect to the application filed by the Tennessee Valley Authority, as applicant and owner, for licenses to operate the Watts Bar Nuclear Plant, Units 1 and 2 (Docket Nos. 50-390 and 50-391). The facility is located in Rhea County, Tennessee, near the Watts Bar Dam on the Tennessee River. This supplement provides recent information regarding resolution of some of the open and confirmatory items and license conditions identified in the Safety Evaluation Report.

NUREG-0885 I03: US NUCLEAR REGULATORY COMMISSION POLICY AND PLANNING GUIDANCE 1984. * Commissioners. January 1984. 23pp. 8403150211. 22662:139.

The purpose of the Policy and Planning Guidance document are to state, clearly and succinctly, the major policies and planning objectives of the Commission so that all employees will know where the

Agency is headed; to provide a common basis within NRC for the development of programs, the establishment of priorities, and the allocation of resources; to furnish guidance that can be used to develop Agency budget requests; and to help fulfill the requirement that NRC's annual report to the President for submission to Congress contain a clear statement of the short-range and long-range goals, priorities, and plans of the Commission as they relate to the benefits, costs, and risks of commercial nuclear power.

NUREG-0887 S04: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF PERRY NUCLEAR POWER PLANT, UNITS 1 AND 2. Docket Nos. 50-440 And 50-441. (Cleveland Electric Illuminating Company) * Division of Licensing. February 1984. 142pp. 8402240381. 22381:118.

Supplement No. 4 to the Safety Evaluation Report on the application filed by the Cleveland Electric Illuminating Company on behalf of itself and as agent for the Duquesne Light Company, the Ohio Edison Company, the Pennsylvania Power Company and the Toledo Edison Company (the Central Area Power Coordination Group or CAPCO), as applicants and owners, for a license to operate the Perry Nuclear Power Plant, Units 1 and 2 (Docket Nos. 50-440 and 50-441), has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission. The facility is located in Lake County, Ohio. This supplement, No. 4 further updates the SER and Supplements 1 through 3 by providing the results of the staff's review of information submitted by the applicant by letter addressing some of the issues listed in Sections 1.9, 1.10, and 1.11 of the SER that were unresolved at the time Supplement 3 was issued.

NUREG-0927 R01: EVALUATION OF WATER HAMMER OCCURRENCE IN NUCLEAR POWER PLANTS. Technical Findings Relevant To USI A-1. SERKIZ, A.W. Division of Safety Technology. March 1984. 79pp. 8404090032. 22947:198.

This report, which includes responses to public comments, summarizes key technical findings relevant to the Unresolved Safety Issue A-1, Water Hammer. These findings were derived from studies of reported water hammer occurrences and underlying causes and provide key insights into means to minimize or eliminate further water hammer occurrences. It should also be noted that this report does not represent a substitute for current rules and regulations.

NUREG-0936 V02 N04: NRC REGULATORY AGENDA. Quarterly Report, October-December 1983. * Division of Rules and Records. February 1984. 180pp. 8403020165. 22482:212.

The NRC Regulatory Agenda is a compilation of all rules on which the NRC has proposed or is considering action and all petitions for rulemaking which have been received by the Commission and are pending disposition by the Commission. The Regulatory Agenda is updated and issued each quarter. The Agendas for April and October are published in their entirety in the Federal Register while a notice of availability is published in the Federal Register for the January and July Agendas.

NUREG-0940 V02 N04: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED. Quarterly Progress Report, October-December 1983. * Director's Office, Office of Inspection and Enforcement. January 1984. 437pp. 8402210028. 22341:286.

This compilation summarizes significant enforcement actions that have been resolved during one quarterly period (October - December 1983) and includes copies of letters, Notices, and Orders sent by the Nuclear Regulatory Commission to licensees with respect to these enforcement actions and the licensees' responses. It is anticipated that the information in this publication will be widely disseminated to managers and employees engaged in activities licensed by the NRC, in the interest of promoting public health and safety as well as common defense and security.

NUREG-0975 V02: COMPILATION OF CONTRACT RESEARCH FOR THE MATERIALS ENGINEERING BRANCH DIVISION OF ENGINEERING TECHNOLOGY. Annual Report For FY 1983. * Division of Engineering Technology. March 1984. 312pp. 8404170012. 24092:183.

This report presents summaries of the research work performed during Fiscal Year 1983 by laboratories and organizations under contracts administered by the NRC's Materials Engineering Branch, Office of Nuclear Regulatory Research. Each contractor has written a more complete and detailed annual report of their work which can be obtained by writing to NRC; however, we believe it is useful to have a summary of each contractor's efforts for the year combined into one volume.

NUREG-0978 FC: MARK III LOCA-RELATED HYDRODYNAMIC LOAD DEFINITION. Generic Technical Activity B-10. * Division of Systems Integration (post 811005). February 1984. 75pp. 8403220326. 22721:112.

This report, prepared by the staff of the Office of Nuclear Reactor Regulation and its consultants at the Brookhaven National Laboratory, provides a discussion of LOCA-related suppression pool hydrodynamic loads in boiling water reactor (BWR) facilities with the Mark III pressure-suppression containment design. Its issuance completes NRC Generic Technical Activity B-10, "Behavior of BWR Mark III Containment." On the basis of certain large-scale tests conducted between 1973 and 1979, the General Electric Company developed LOCA-related hydrodynamic definitions for use in the design of the standard Mark III containment. The staff and its consultants have reviewed these load definitions and their bases and conclude that, with a few specified changes, the proposed load definitions provide conservative loading conditions. The staff approved acceptance criteria for LOCA-related hydrodynamic loads are provided in Appendix C of this report.

NUREG-0993 R01: REGULATORY ANALYSIS FOR USI A-1, "WATER HAMMER." SERKIZ, A. W. Division of Safety Technology. March 1984. 30pp. 8404090143. 22947:309.

NUREG-0993, Revision 1 is the staff's regulatory analysis dealing with the resolution of the Unresolved Safety Issue A-1, Water Hammer. This report contains the value-impact analysis for this issue, public comments received, and staff response, or action taken, in response to those comments. The staff's technical findings regarding water hammer in nuclear power plants are contained in NUREG-0927.

NUREG-1007 S01: SAFETY EVALUATION REPORT RELATED TO THE LICENSE RENEWAL AND POWER INCREASE FOR THE NATIONAL BUREAU OF STANDARDS REACTOR. Docket No. 50-184. * Division of Licensing. March 1984. 18pp. 8404120323. 24035:133.

Supplement 1 to the Safety Evaluation Report (SER) related to the renewal of the operating license and for a power increase (10 MWt to 20 MWt) for the research reactor at the National Bureau of Standards (NBS) facility has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission. The reactor facility is located in Montgomery County, Maryland. This supplement reports on the review of the licensee's emergency plan, which had not been reviewed at the time the Safety Evaluation Report (NUREG-1007) was published, and the review of the NBS application by the Advisory Committee on Reactor Safeguards, which was completed subsequent to the publication of the SER.

NUREG-1015: STATE SURVEILLANCE OF RADIOACTIVE MATERIAL TRANSPORTATION. Final Report. SALOMON, S. N. Office of State Programs, Director. February 1984. 72pp. 8403230190. 22759:048.

The main objective of this final report on the State surveillance of the transportation of radioactive material (RAM) is to suggest the most cost-effective inspection areas where enforcement actions might be taken by States during their participation in the State Hazardous Materials Enforcement Development (SHMED) Program of the U.S. Department of Transportation (DOT). On the basis of the lessons learned from the surveillance program, these actions are enforcement at low-level radioactive burial sites by means of civil penalties and site use suspension; enforcement at airports and at terminals that forward freight; and enforcement of courier companies. More effective and efficient enforcement can be achieved through instrumented police patrol cars and remote surveillance because they require the least amount of time of enforcement personnel. Also, there is a strong relationship between effective emergency response and enforcement because the appropriate shipping papers, placarding and knowledge of appropriate emergency response procedures lead to improved emergency response. These lessons originate from a ten-State surveillance program from 1977 through 1981 jointly sponsored by the U.S. Nuclear Regulatory Commission (NRC) and DOT. States give recommendations in the categories of education, training expanded surveillance, coordination and enforcement. Topics of special interest covered include low-level radioactive waste disposal sites, airports, cargo terminals, highways, ports, and accidents and incidents. The relationship to other studies, the status of the SHMED Program, a synopsis of State RAM surveillance reports, and NRC/DOT expenditures are given. Also, relevant laws and regulations and a selected bibliography are included.

NUREG-1022 S01: LICENSEE EVENT REPORT SYSTEM. Description Of System And Guidelines For Reporting. HEBDON, F. J. Director's Office. February 1984. 58pp. 8403070121. 22561:308.

On July 26, 1983, the Commission published in the Federal Register a final rule (10 CFR 50.73) that modified and codified the Licensee Event Report (LER) system. The rule became effective on January 1, 1984. In September 1983, the NRC published NUREG-1022 which provides supporting information and guidance that is of interest to persons responsible for the preparation and review of LERs. The information contained in NUREG-1022 includes: (1) a brief description of how LERs are analyzed by the NRC, (2) a restatement of the guidance contained in the Statement of Consideration that accompanied publication of the LER rule, (3) a set of examples of potentially reportable events with staff comments on the actual reportability of each event, (4) guidance on how to prepare an LER, including the LER forms, and (5) guidance on submittal of LERs. Subsequently, during the period from October 25, 1983 to November 16, 1983, the NRC staff held five regional meetings to discuss the scope and content of the LER rule with utility and NRC regional representatives. During these meetings, numerous questions arose and were answered. This supplement to NUREG-1022 contains a summary of the questions asked and the answers given.

NUREG-1039: REVIEW AND EVALUATION OF THE NUCLEAR REGULATORY COMMISSION SAFETY RESEARCH PROGRAM FOR FISCAL YEAR 1985. * ACRS - Advisory Committee on Reactor Safeguards. February 1984. 74pp. 8403070385. 22561:234.

Public Law 95-209 includes a requirement that the Advisory Committee on Reactor Safeguards submit an annual report to Congress on the safety research program of the Nuclear Regulatory Commission. This report presents the results of the ACRS review and evaluation of the NRC safety research program for Fiscal Year 1985. The report contains a number of comments and recommendations.

NUREG-1040: FY 1985 BUDGET ESTIMATES. * Division of Budget & Analysis. January 1984. 68pp. 8402210188. 22346:072.

This report contains the fiscal year budget justifications to Congress. The budget estimates for salaries and expenses for fiscal year 1985 provide for obligations of $468,200,000 to be funded in total by a new appropriation.

NUREG-1042: TECHNICAL SPECIFICATIONS FOR SUSQUEHANNA STEAM ELECTRIC STATION,UNIT NO.2.Docket No. 50-388.(Pennsylvania Power And Light Company) HOFFMAN,D.R. Division of Licensing. March 1984. 519pp. 8404100519. 22978:001.

Susquehanna Steam Electric Station, Unit 2 Technical Specifications were prepared by the U. S. Nuclear Regulatory Commission to set forth the limits, operating conditions, and other requirements applicable to a nuclear reactor facility as set forth in Section 50.36 of 10 CFR Part 50 for the protection of the health and safety of the public.

NUREG-1043: SAFETY EVALUATION REPORT RELATED TO THE RENEWAL OF THE OPERATING LICENSE FOR THE TRAINING AND RESEARCH REACTOR AT THE UNIVERSITY OF MARYLAND.Docket No. 50-166. * Division of Licensing. March 1984. 73pp. 8404160225. 24065:294.

This Safety Evaluation Report for the application filed by the University of Maryland, (UMD) for a renewal of operating license R-70 to continue to operate a training and research reactor facility has been prepared by the Office of Nuclear Reactor Regulation of the U.S. Nuclear Regulatory Commission. The facility is owned and operated by the University of Maryland and is located at a site in College Park, Prince Georges County, Maryland. The staff concludes that this training reactor facility can continue to be operated by UMD without endangering the health and safety of the public.

NUREG-1045: GUIDANCE ON THE APPLICATION OF COMPENSATORY SAFEGUARDS MEASURES FOR POWER REACTOR LICENSEES. BLUMENTHAL,H.S. Division of Safeguards. January 1984. 10pp. 8402170517. 22320:024.

This NUREG provides criteria and examples to be used by power reactor licenses and the NRC staff in determining the acceptability of compensatory safeguards measures.

NUREG-1046 DRFT: DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN THE UNSATURATED ZONE: TECHNICAL CONSIDERATIONS. Draft Report For Comment. OSTROWSKI, N. ; NICHOLSON, T. J. ; ALEXANDER, D. H. ; et al. Division of Health, Siting & Waste Management. February 1984. 43pp. 8402240373. 22380:264.

The Nuclear Regulatory Commission (NRC) recently published final regulations related to the disposal of high-level radioactive wastes in geologic repositories (46 FR 13971 and 48 FR 28194). These regulations were limited to geologic repositories in the saturated zone since earlier Department of Energy program plans emphasized fully saturated geologic media. However, the Department of Energy recently has initiated preliminary studies in unsaturated geologic media, and requested that NRC reexamine and modify 10 CFR Part 60 so that it will apply to all geologic media. This request also was made by several commenters on the proposed 10 CFR Part 60 technical criteria. NRC has considered this request and has proposed amendments to ensure that the provisions of 10 CFR Part 60 are equally applicable to waste disposal in either the saturated or unsaturated zone. In reaching this decision, NRC conducted a detailed study of the arguments presented by the public commenters, the issues involved in disposal within the unsaturated zone, and the relative attributes and concerns associated with disposal in the unsaturated zone. These points are discussed in this document. The NRC staff has concluded that disposal within the unsaturated zone is possible, provided that the site and the design of the geologic repository are capable of meeting the performance objectives of 10 CFR Part 60.

NUREG-1049: ENVIRONMENTAL IMPACT APPRAISAL FOR RENEWAL OF SPECIAL NUCLEAR MATERIAL LICENSE NO. SNM-42. Docket No. 70-27. (Babcock & Wilcox Company, Naval Nuclear Fuel Division). * Division of Fuel Cycle & Material Safety. March 1984. 87pp. 8403270267. 22787:235.

This Environmental Impact Appraisal is issued by the U.S. Nuclear Regulatory Commission in response to an application submitted by Babcock & Wilcox Company, Naval Nuclear Fuel Division, for renewal of Special Nuclear Material License No. SNM-42.

NUREG-1050 DRFT: PROBABILISTIC RISK ASSESSMENT (PRA): STATUS REPORT AND GUIDANCE FOR REGULATORY APPLICATION. Draft Report For Comment. * Division of Risk Analysis & Operations (post 840429). February 1984. 337pp. 8402130612. 22215:001.

The Commission's Safety Goal Policy Statement in NUREG-0880, Rev 1, directs the staff "...to collect available information on PRA studies and prepare a reference document that describes the current status of knowledge concerning the risk of plants licensed in the US." The document discusses the purpose and content of a PRA and identifies the PRAs and other probabilistic studies performed to date. It then discusses the level of maturity and uncertainties associated with the various elements of PRA methodology as well as those generic insights derived from studies performed. Finally, potential uses of PRA in regulation are evaluated.

NUREG/CP-0048 V01: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY INFORMATION MEETING. SZAWLEWICZ, S. A. Szawlewicz, S. A. January 1984.

721pp. 8401310150. 22030:001.

The papers published in this report were presented at the Eleventh Water Reactor Safety Research Information Meeting held at the National Bureau of Standards, Gaithersburg, Maryland, October 24-28, 1983. The papers describe the results and program plans in nuclear reactor safety research conducted in this country and abroad. International participation in the exchange of nuclear safety research information is consistently encouraged by the Nuclear Regulatory Commission and was exemplified at this meeting by the relatively large number of papers (23) given by representatives of seven different European countries, Japan and Taiwan.

Volume 1 reports information presented at the a. Plenary Session, b. Integral Systems Experiments, c. Separate Effects, d. Foreign Programs in Thermal Hydraulics, and e. The EPRI Safety Research Session.

NUREG/CP-0048 V02: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING. SZAWLEWICZ,S.A. Szawlewicz, S.A. January 1984. 370pp. 8401260097. 21988:001.

The papers published in this report were presented at the Eleventh Water Reactor Safety Research Information Meeting held at the National Bureau of Standards, Gaithersburg, Maryland, October 24-28, 1983. The papers describe the results and program plans in nuclear reactor safety research conducted in this country and abroad. International participation in the exchange of nuclear safety research information is consistently encouraged by the Nuclear Regulatory Commission and was exemplified at this meeting by the relatively large number of papers (23) given by representatives of seven different European countries, Japan and Taiwan.

Volume 2 reports information presented on a. Pressurized Thermal Shock; b. Code Assessment and Improvement; c. 2D/3D Research Program and d. Nuclear Plant Analyzer Program.

NUREG/CP-0048 V03: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING. SZAWLEWICZ,S.A. Szawlewicz, S.A. January 1984. 705pp. 8401260096. 21986:001.

The papers published in this report were presented at the Eleventh Water Reactor Safety Research Information Meeting held at the National Bureau of Standards, Gaithersburg, Maryland, October 24-28, 1983. The papers describe the results and program plans in nuclear reactor safety research conducted in this country and abroad. International participation in the exchange of nuclear safety research information is consistently encouraged by the Nuclear Regulatory Commission and was exemplified at this meeting by the relatively large number of papers (23) given by representatives of seven different European countries, Japan and Taiwan.

Volume 3 reports information presented on a. Containment Systems Research; b. Status of Source Term Reassessment; c. Fuel Systems Research Program, and d. Risk Analysis.

NUREG/CP-0048 V04: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING. SZAWLEWICZ,S.A. Szawlewicz, S.A. January 1984. 470pp. 8401260108. 21969:327.

The papers published in this report were presented at the Eleventh Water Reactor Safety Research Information Meeting held at the National Bureau of Standards, Gaithersburg, Maryland, October 24-28, 1983. The papers describe the results and program plans in nuclear reactor safety research conducted in this country and abroad. International participation in the exchange of nuclear safety research information is consistently encouraged by the Nuclear Regulatory Commission and was exemplified at this meeting by the relatively large number of papers (23) given by representatives of seven different European countries, Japan and Taiwan.

Volume 4 covers the sessions on Materials Engineering Research.

NUREG/CP-0048 V05: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING. SZAWLEWICZ,S.A. Szawlewicz, S.A. January 1984. 353pp. 8401250162. 21950:254.

The papers published in this report were presented at the Eleventh Water Reactor Safety Research Information Meeting held at the National Bureau of Standards, Gaithersburg, Maryland, October 24-28, 1983. The papers describe the results and program plans in nuclear reactor safety research conducted in this country and abroad. International participation in the exchange of nuclear safety research information is consistently encouraged by the Nuclear Regulatory Commission and was exemplified at this meeting by the relatively large number of papers (23) given by representatives of seven different European countries, Japan and Taiwan.

Volume 5 reports information presented on a. Mechanical Engineering; b. Structural Engineering; c. Seismic Research Program; d. Instrumentation and Control Program, and e. Research on Equipment Survival in Accidents.

NUREG/CP-0048 V06: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING. SZAWLEWICZ,S.A. Szawlewicz, S.A. January 1984. 206pp. 8401250125. 21950:046.

The papers published in this report were presented at the Eleventh Water Reactor Safety Research Information Meeting held at the National Bureau of Standards, Gaithersburg, Maryland, October 24-28, 1983. The papers describe the results and program plans in nuclear reactor safety research conducted in this country and abroad. International participation in the exchange of nuclear safety research information is consistently encouraged by the Nuclear Regulatory Commission and was exemplified at this meeting by the relatively large number of papers (23) given by representatives of seven different European countries, Japan and Taiwan.

Volume 6 reports information presented on a. Human Factors Research; b. Safeguards Research; c. Emergency Preparedness; d. Process Control, and e. Occupational Radiation Protection.

NUREG/CP-0049: PROCEEDINGS OF THE WORKSHOP ON SPENT FUEL/CLADDING REACTION DURING DRY STORAGE. REISENWEAVER,D. Division of Engineering Technology. March 1984. 499pp. 8404130225. 24047:069.

This document presents the papers that were presented at the workshop on spent fuel dry storage research which was held in Gaithersburg, MD on August 17-18, 1983.

NUREG/CP-0050: PROCEEDINGS OF THE INTERNATIONAL BETA DOSIMETRY SYMPOSIUM. Held at Washington,DC February 15-18,1983. * Office of Nuclear Regulatory Research, Director. * Energy, Dept. of. * Health Physics Society. January 1984. 670pp. 8402100499. 22209:001.

At the International Beta Dosimetry Symposium, 1982, invited

lecturers presented introductory summaries for assigned topics and chaired both technical sessions and related workshops. These proceedings contain the technical papers that were presented, summaries of each of the workshop discussion sessions, and the final summary.
1. Review the current state-of-the-art in beta dosimetry and the applied problems throughout the nuclear industry;
2. Review ongoing research and development and new technology.
3. Stimulate vigorous interchange on an international basis to encourage new ideas and technology transfer;
4. Review biological effects and explore the need for better-defined protection standards.
5. Provide a public record of the above information; and
6. Charge the industry and advisory bodies to provide improved technology and applied techniques as well as more clear guidance for worker protection.

NUREG/CR-1755: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING NUCLEAR REACTORS AT MULTIPLE-REACTOR STATIONS. WITTENBROCK, N. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1982. 339pp. 8401230677. 21901:083.

Safety and cost information is developed for the conceptual decommissioning of large (1175-MWe) pressurized water reactors (PWR) and large (1155-MWe) boiling water reactors (BWR) at multiple-reactor stations. Three decommissioning alternatives are studied: DECON (immediate decontamination), SAFSTOR (safe storage followed by deferred decontamination), and ENTOMB (entombment). Safety and costs of decommissioning are estimated by determining the impact of probable features of multiple-reactor-station operation that are considered to be unavailable at a single-reactor station, and applying these estimated impacts to the decommissioning costs and radiation doses estimated in previous PWR and BWR decommissioning studies. The multiple-reactor-station features analyzed are: the use of interim onsite nuclear waste storage with later removal to an offsite waste disposal facility, the use of permanent onsite nuclear waste disposal, the dedication of the site to nuclear power generation, and the provision of centralized services.

NUREG/CR-2000 V02N12: LICENSEE EVENT REPORT (LER) COMPILATION. For Month Of December 1983. * Oak Ridge National Laboratory. January 1984. 169pp. 8402060529. ORNL/NSIC-200. 22092:143.

This monthly report contains Licensee Event Report (LER) operational information that was processed into the LER data file of the Nuclear Safety Information Center (NSIC) during the one month period identified on the cover of this document. The LERs, from which this information is derived, are submitted to the Nuclear Regulatory Commission (NRC) by nuclear power plant licensees in accordance with federal regulations. Procedures for LER reporting are described in detail in NRC Regulatory Guide 1.16 and NUREG-0161, Instructions for Preparation of Data Entry Sheets for Licensee Event Reports. The LER summaries in this report are arranged alphabetically by facility name and then chronologically by event date for each facility. Component, system, keywords, and component vendor indexes follow the summaries. The components, systems, and vendors are those identified by the utility when the LER is initiated; the keywords are assigned by the computer using correlation tables from the Sequence Coding and Search System.

NUREG/CR-2000 V03 N1: LICENSEE EVENT REPORT (LER) COMPILATION. For Month Of January 1984. * Oak Ridge National Laboratory. February 1984. 123pp. 8403070392. ORNL/NSIC-200. 22554:092.

See NUREG/CR-2000,V02,N12 abstract.

NUREG/CR-2000 V03 N2: LICENSEE EVENT REPORT (LER) COMPILATION. For Month Of February 1984. * Oak Ridge National Laboratory. March 1984. 167pp. 8404020225. ORNL/NSIC-200. 22876:160.

See NUREG/CR-2000,V02,N12 abstract.

NUREG/CR-2210: TECHNOLOGY,SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS. LUDWICK,J.D.; MOORE,E.B. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 7pp. 8402060341. 22105:001.

Safety and Cost information is developed for the conceptual decommissioning of five representative independent spent fuel storage installations. This information is presented by analyzing major facility components and then developing safety and cost information for the reference installations made up of these components. Three decommissioning alternatives are studied to obtain comparisons between costs (in 1981 dollars), occupational radiation doses, potential radiation dose to the public, and other safety impacts. The alternatives considered are: DECON (immediate decontamination), SAFSTOR (safe storage followed by deferred decontamination), and ENTOMB (entombment).

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report,April-June 1983. BARI,R.A.; CERBONE,R.J.; GINSBERG,T.; et al. Brookhaven National Laboratory. March 1984. 159pp. 8404020011. BNL-NUREG-51454. 22876:001.

The Advanced and Water Reactor Safety Research Programs Quarterly Progress Reports have been combined and are included in this report entitled, "Safety Research Programs Sponsored by the Office of Nuclear Regulatory Research - Quarterly Progress Report." The projects reported are the following: HTGR Safety Evaluation, SSC Development, Validation and Application, CRBR Balance of Plant Modeling, Thermal-Hydraulic Reactor Safety Experiments, LWR Plant Analyzer Development, LWR Code Assessment and Application, Thermal Reactor Code Development (RAMONA-3B); Stress Corrosion Cracking of PWR Steam Generator Tubing, Bolting Failure Analysis, Probability Based Load Combinations for Design of Category I Structures, Mechanical Piping Benchmark Problems; Human Error Data for Nuclear Power Plant Safety Related Events, Criteria for Human Engineering Regulatory Guides and Human Factors in Nuclear Power Plant Safeguards.

NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS. LOOMIS,G.G.; SODA,K. EG&G, Inc. October 1982. 74pp. 8307210265. EGG-2200. 19688:093.

A series of experiments was conducted in a scaled model of a pressurized water reactor (Semiscale Mod-2A) to investigate natural circulation heat rejection under normal and abnormal operating conditions. The effects on natural circulation of diminished primary and secondary coolant inventory, as well as the presence of non-condensible gas in the primary, were determined. Three distinct modes of natural circulation were found to occur as a function of primary coolant inventory: single-phase, two-phase (liquid continuous), and reflux condensation. The primary coolant inventory limit for adequate heat rejection was found to be the amount of coolant necessary to keep the core covered. The presence of nitrogen gas in plausible quantities altered natural circulation behavior, but did not preclude adequate heat rejection.

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY. RYMAN, J. C.; HERMANN, O. W.; WEBSTER, C. C.; et al. Oak Ridge National Laboratory. October 1982. 144pp. 8307250159. ORNL/CSD-90. 19738:280.

The SAS2 control module and ORIGEN-2 code of the SCALE code system have been used with the standard ORIGEN-S data libraries and the SCALE 27-group ENDF/B-V cross-section library to predict afterheat power and fuel inventories in uranium-fueled pressurized water reactor (PWR) fuel assemblies. Based on present comparisons with measured data and on previous experience, it is concluded that this combination of codes and data bases is properly qualified for the calculation of afterheat power in uranium-fueled PWR fuel assemblies. The prediction of fission product fuel inventory data for fuel samples from three PWR fuel assemblies appears to be adequate, but the prediction of actinide inventory data is seen to be quite conservative with respect to measured data. Additional investigation of the differences between calculated and measured inventory parameters, improvements in the SAS2 cross section treatment, and acquisition of additional experimental data appear to be needed to qualify the SAS2, ORIGEN-2, and data base combination for uranium-fueled PWR fuel inventory calculations. It was determined, however, that predicted values of afterheat power for three uranium-fueled PWR fuel assemblies were in good agreement (about 5% conservative) with measured values.

NUREG/CR-2679 V03: ADVANCED REACTOR SAFETY RESEARCH QUARTERLY REPORT, JULY-SEPTEMBER 1982. * Sandia Laboratories. March 1984. 244pp. 8404020211. SAND82-0904. 22877:001.

Sandia National Laboratories is conducting, under USNRC's sponsorship, phenomenological research related to the safety of commercial nuclear power reactors.

The overall objective of this work is to provide NRC a comprehensive data base essential to (1) defining key safety issues, (2) understanding risk-significant accident sequences, (3) developing and verifying models used in safety assessments, and (4) assuring the public that power reactor systems will not be licensed and placed in commercial service in the United States without appropriate consideration being given to their effects on health and safety.

Together with other programs, the Sandia effort is directed at assuring the soundness of the technology base upon which licensing decisions are made.

This report describes progress in a number of activities dealing with current safety issues relevant to both light water and breeder reactors. The work includes a broad range of experiments to simulate accidental conditions to provide the required data base to understand important accident sequences and to serve as a basis for development and verification of the complex computer simulation models and codes used in accident analysis and licensing reviews. Such a program must include the development of analytical models, verified by experiment, which can be used to predict reactor and safety system performance under a broad variety of abnormal conditions.

Current major emphasis is focused on providing information to NRC relevant to (1) its deliberations and decisions dealing with sever LWR accidents, and (2) its safety evaluation of the proposed Clinch River Breeder Reactor.

NUREG/CR-2721: SCOPING STUDY OF THE ALTERNATIVES FOR MANAGING WASTE CONTAINING CHELATING DECONTAMINATION CHEMICALS. PREMUZIC, E. T. ; MANAKTOLA, H. K. Brookhaven National Laboratory. February 1984. 56pp. 8402240378. BNL-NUREG-51593. 22380:309.

Selected trench waters from several low-level waste disposal sites have been analyzed for the presence of chelating decontamination chemicals. Several methods for decomposition of chelating agents used in decontamination processes are discussed. Specifically, nitriloacetic acid (NTA), ethylenediamine tetra acetic acid (EDTA), and diethylene triamine pentaacetic acid (DTPA) decomposition properties under thermal, biological, oxidative, and photochemical conditions are reviewed and discussed in the light of currently available information. Based on the analysis of the information, it is concluded that combustion and oxyphotolysis may be worth further exploration as possible methodologies for the degradation of chelating decontamination chemicals.

NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS. LONGEST, A. W. ; CROWLEY, J. L. ; CHAPMAN, R. H. Oak Ridge National Laboratory. October 1982. 54pp. 8307210260. ORNL/TM-8413. 19688:167.

Five single-rod, heated-shroud replicate burst tests were conducted to study statistical variations in Zircaloy cladding deformation under simulated loss-of-coolant accident conditions. The test conditions used (low steam coolant flow and a heating rate of ~10 K/s to tube failure at ~775 C) were conducive to large deformation and matched those used in two of the Multirod Burst Test Program bundle tests so that the results could be used to aid in interpretation of differences observed for individual rods in bundle tests.

The results established estimates of variations that can be expected for freely deforming tubes under these test conditions. The data also indicated a potential for rod-to-rod mechanical interactions in a large bundle.

NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE, PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION. LOYOLA, V. M. ; WOMELSDUFF, J. E. Sandia Laboratories. January 1984. 31pp. 8402230378. SAND82-1179. 22376:177.

The corrosion of galvanized steel, to produce hydrogen gas, will occur if sprays operate during a Loss-of-Coolant Accident in a Light Water Reactor. The rates of hydrogen generation, however, are variable and dependent on accident and post-accident conditions. This report describes a study designed to identify the important parameters (temperature, pH, and boric acid concentration) in determining the rates of hydrogen generation from Light Water Reactor containment building spray solutions. The data are gathered over a wide range of temperature, pH, and boric acid concentration, and are used in a two-level, three-factor factorial experiment to determine the relative importance of the three parameters to the hydrogen generation process. A statistical treatment of the data gives an indication of the relative importance of the parameters (temperature, pH, boric acid concentration) and of their interactions. It attempts to fit the data to a relatively simple equation to model the interactions of the various parameters.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
BARI, R. A.; PAPAZOGLOU, I. A.; BUSLIK, A. J.; et al. Brookhaven National Laboratory. January 1984. 234pp. 8402060484. BNL-NUREG-51559. 22109:014.

A procedures guide for the performance of probabilistic safety assessment has been prepared for interim use in the Nuclear Regulatory Commission programs. It will be revised as comments are received, and as experience is gained from its use. The probabilistic safety assessment studies performed are intended to produce probabilistic predictive models that can be used and extended by the utilities and by NRC to sharpen the focus of inquiries into a range of issues affecting reactor safety. This guide addresses the determination of the probability (per year) of core damage resulting from accident initiators internal to the plant, and from loss of offsite electric power. The scope includes analyses of problem-solving (cognitive) human errors, a determination of importance of the various core damage accident sequences, and an explicit treatment and display of uncertainties for the key accident sequences. Ultimately, the guide will be augmented to include the plant-specific analysis of in-plant processes (i.e., containment performance) and the risk associated with external accident initiators, as consensus is developed regarding suitable methodologies in these areas. This guide provides the structure of a probabilistic safety study to be performed, and indicates what products of the study are essential for regulatory decision making. Methodology is treated in the guide only to the extent necessary to indicate the range of methods which is acceptable; ample reference is given to alternative methodologies which may be utilized in the performance of the study.

NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.
DODD, C. V.; DEEDS, W. E.; MCCLUNG, R. W. Oak Ridge National Laboratory. October 1982. 9pp. 8307210268. ORNL/TM-8418/V1. 19672:304.

Eddy-current methods provide the best in-service inspection of steam generator tubing, and these techniques can produce ambiguity because of the many independent variables that affect the signals. This development program has used mathematical models and has developed or modified computer programs to design optimum probes, instrumentation, and techniques for multifrequency multiproperty examinations. Interactive calculations and experimental measurements have been made with modular eddy-current instrumentation and a minicomputer. These establish the coefficients for the complex equations that define the values of the desired properties (and the attainable accuracy) despite changes in other significant variables. The computer programs for calculating the accuracy with which various properties can be measured indicate that the tubing wall thickness and the defect size can be measured much more accurately than is required, even when other calculations show that an array of small pancake coils pressed against the inner wall of the tubing can detect and locate small flaws on the outer wall of the tubing with much greater accuracy and reliability than can the usual large circumferential coils. We are continuing to investigate such arrays.

NUREG/CR-2869 R01: DIRECTORY AND PROFILE OF LICENSED URANIUM-RECOVERY FACILITIES. WHITE, W. S. Argonne National Laboratory. March 1984. 115pp. 8404130132. ANL/ES-128 R01. 24048:221.

The DIRECTORY AND PROFILE OF LICENSED URANIUM-RECOVERY FACILITIES presents facts, data, and information about conventional mills, in-situ mining facilities, heap leach operations, and other operations which process and produce marketable quantities of yellowcake. In the United States, such facilities are found in Agreement States (Arizona, Colorado, Florida, Louisiana, New Mexico, Texas, and Washington) and in Non-Agreement States (South Dakota, Utah and Wyoming).

Each facility is described on a case-by-case basis. Reporting of information on the conventional uranium mills begins with a brief narrative description that outlines general and specific characteristics about the site. Data sheets summarize the principal operating characteristics of the facility by listing the following information: location/ownership, licensing data, processing of uranium, characteristics of effluent releases and/or tailings, and radiological parameters. For in-situ and heap leach facilities, only data sheets are included.

NUREG/CR-2896 V01: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume I: User's Manual. DOMANUS, H. M.; SCHMITT, R. C.; SHA, W. T.; et al. Argonne National Laboratory. March 1984. 327pp. 8403300261. ANL-82-25 V01. 22839:217.

The COMMIX-1A computer program, the improved version of COMMIX-1, is designed to analyze steady-state/transient, single-phase, three-dimensional fluid flow with heat transfer in reactor components and multicomponent systems. The concepts of volume porosity, directional surface permeability, distributed resistance, and distributed heat source or sink is used to model a flow domain with stationary structures. The new porous-media formulation permits simulation of either a single component or a multicomponent system. The conservation equations of mass, momemtum, and energy based on the new porous-media formulation are solved as a boundary-value problem in space and an initial-value problem in time.

This report (Volume I) describes in detail the basic equations, formulations, solution procedures, flow charts, rebalancing scheme for faster convergency, options available to users, models to describe the auxiliary phenomena, input instructions, and two sample problems. The Volume II assembles and summarizes the results of many simulations that have been performed with COMMIX-1A computer program.

NUREG/CR-2896 V02: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume II: Assessment And Verification. DOMANUS, H. M.; SCHMITT, R. C.; SHA, W. T. Argonne National Laboratory. February 1984. 95pp. 8403300285. ANL-82-25 V02. 22840:182.

This report assembles and summarizes the results of many simulations that have been performed with COMMIX-1A computer program since the beginning of its development in 1976. The COMMIX-1A is a three-dimensional, time-dependent, single-phase computer program for thermal-hydraulic analysis of component/multicomponent systems under normal/off-normal operating conditions. This report compiles most simulations for which comparisons with experimental measurements or analytical solutions have been made.

NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA. ZANOTELLI, W. A.; MILLER, G. D.; CRAVEN, S. M. Mound Facility/Monsanto Research Corp. October 1982. 18pp. 8307210255. MLM-2983. 19688:297.

During the main thrust of the HCDA studies, it was found that sodium uranates, especially (3)NaU(4)O, were formed when the Na-U-O system was subjected to high temperatures approximating those of the HCDA. Mechanisms through which these rather complicated compounds are formed remain unknown. The purpose of these SIMS and ESCA studies was to detect the formation of any precursor ion species to the sodium uranates. The main species detected from the Ar+ excited positive SIMS analyses of oxides in salts of uranium were (2)UO+, UO+, and U+. The main ion detected from the Ar+ excited SIMS analyses of a (2)Na(2)U(7)O or of a uranium dioxide - disodium oxide pellet or from a sodium film deposited on a uranium metal foil. ESC analyses show peak shapes and binding energies for the (2)Na(2)U(7)O pellet that are different from those for the U-Na foil samples and the uranium dioxide - disodium oxidee pressed pellet. The ESCA results agree with theory and support the presence of (2)U(7)O = in (2)Na(2)U(7)O; however, SIMS analyses show no evidence of possible uranate precursor formation in an Ar+ sputtered ion beam.

NUREG/CR-2932 V02: EQUIPMENT QUALIFICATION RESEARCH TEST OF ELECTRIC CABLE WITH FACTORY SPLICES AND INSULATION REWORK TEST NO. 2, REPORT NO. 2. MINOR, E. E.; FURGAL, D. T. Sandia Laboratories. November 1982. 65pp. 8307210257. SAND81-2027. 19688:222.

Electric cables with fire-retardant chemically crosslinked polyolefin extruded insulation containing factory-made center-conductor splices and insulation repairs manufactured by General Electric Company were used in a methodology test of the IEEE Standard 383-2974. This standard is concerned with the ability of cables to function during and following exposure to aging and LOCA/MSLB environments. Cable specimens were radiation aged at a low-dose rate and then thermally aged to simulate a 40-year containment exposure. After aging, the specimens were subjected to LOCA radiation and a 33-day steam and chemical spray exposure. The cables were electrically loaded and functioned without failure during and after LOCA steam and chemical spray exposure. Insulation resistance measurements were taken during the exposure sequence. Subsequent to the exposures, hipot and mandrel bend tests were conducted. Test results indicate that the methods given in IEEE 383-1974 are adequate to show that cables can function and support control operations during and after a LOCA/MSLB of the severity simulated by the test. Further, the presence of center-conductor splices and insulation repairs did not appear to degrade cable performance.

NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982. SHACK, W. J.; REST, J.; KASSNER, T. F.; et al. Argonne National Laboratory. January 1984. 125pp. 8401160443. ANL-82-41. 21824:001.

This progress report summarizes the Argonne National Laboratory work performed during October, November, and December 1983 on water reactor safety problems. The research and development areas covered are Environmentally Assisted Cracking in Light Water Reactors, Transient Fuel Response and Fission Product Release, Clad Properties for Code Verification and Long-Term Embrittlement of Cast Duplex Stainless Steels in LWR Systems.

NUREG/CR-3056: POPULATION DISTRIBUTION ANALYSIS FOR NUCLEAR POWER PLANT SITING. DURFEE, R. C. ; COLEMAN, P. R. Oak Ridge National Laboratory. December 1983. 104pp. 8402170439. ORNL/CSD/TM-197. 22302:166.

The Nuclear Regulatory Commission is in the process of reviewing guidelines and regulations associated with population distribution criteria around nuclear power plant sites. the purpose of this paper is to describe the methodology for calculating population distribution in the U.S. and then evaluating specific population criteria and their effect upon the selection of future nuclear power plant sites. Through the use of computer systems, different alternatives may be evaluated for individual sites or for major regions of the country to determine their restrictiveness on siting nuclear plants. Two types of criteria were used. They involved the analysis of population distributions radially out from each possible site and the study of angular distributions around each site. Results are presented in both tabular and graphic form using national, regional, and site-level computer maps.

NUREG/CR-3057: ANALYSIS OF AVAILABILITY OF PREVIOUSLY IDENTIFIED SITES UNDER ALTERNATIVE DEMOGRAPHIC CRITERIA. KELLY, M. J. ; RUSH, R. M. ; OTT, W. R. ; et al. Oak Ridge National Laboratory. January 1984. 44pp. 8402170417. ORNL-5936. 22320:041.

This study evaluates the effect of various alternative population criteria on the availability of suitable sites for new nuclear power plants. The population criteria investigated include population density limits of 500 and 750 persons per square mile within 30 miles of the site and three different limits on the total population in adjacent sectors. The site availability in the states with higher population density was investigated--using power pools, regional aggregations, and specific sites as appropriate. The results of this study indicate that the application of any of the alternative population criteria studied will not rule out the use of the nuclear option in the northeast quadrant of the United States. The analysis demonstrates that viable sites exist even in the states and service areas with the largest population densities. These results, together with a cursory examination of the rest of the United States indicating that both real and potential viable sites are available, confirm that the application of any of the alternative population criteria studies will not preclude the identification of suitable nuclear sites in any region.

NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER. HUCHTON, R. L. ; BIRD, S. K. ; TKACHYK, J. W. ; et al. Exxon Nuclear Co., Inc. (subs. of Exxon Corp.). February 1984. 52pp. 8403060533. ENICO-1125. 22522:064.

Three calibration sources were designed, developed, and fabricated for a CDV-700 ratemeter equipped with a specially-shielded 6306 G-M detector. The CDV-700/6306 has been proposed for use with the BNL Air Sampler designed for radioiodine monitoring upon a nuclear reactor accident.

Specifically, the three sources were constructed in a geometry identical to the BNL air sampler radioiodine absorption canister, which is a silver silica gel filled 2.75-inch diameter right circular cylinder with a 1.0-inch diameter annulus, into which the 6306 G-M detector is inserted. As fabricated, each source consisted of an outer stainless steel housing, an inner (133)Ba impregnated polyester liner, 4-weight percent silver silica gel media, and a laser welded hermetically-sealed stainless steel lid. Respectively, the levels of (133)Ba, an (131)I simulant, were varied in the three sources to yield nominal CDV-700/6306 instrument responses of 200 cpm, 2,000 cpm and 20,000 cpm.

NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527. CUNNINGHAM, M. E.; LANNING, D. D. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 36pp. 8401310449. PNL-4542. 22036:234.

Preirradiation characterization data and irradiation data are summarized and postirradiation examination (PIE) data are presented for the six-rod instrumented fuel assembly IFA-527. This assembly was irradiated in the Halden Boiling Water Reactor, Halden, Norway, as part of the U.S. Nuclear Regulatory Commission-sponsored Experimental Support and Verification of Single-Rod Fuel Codes Program. The assembly was irradiated from July 1, 1980, to April 8, 1981, during which time rod-average burnups of approximately 1.0 MWd/kgM were obtained. All six rods had pressure boundary failures prior to removal from the reactor. The PIE was conducted at the Harwell laboratory of the United Kingdom's Atomic Energy Research Establishment. Examinations were oriented toward discovering the site and cause of rod failure (visual, neutron radiography, leak checking) and the effects of operating an assembly with failed rods (micrography of fuel and cladding). It was concluded that rod failures occurred in the end fittings and not in the cladding. No significant fuel or cladding microstructural changes were observed.

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432. LANNING, D. D.; BRADLEY, E. R. Battelle Memorial Institute, Pacific Northwest Laboratories. March 1984. 189pp. 8404160201. PNL-4543. 24065:042.

Preirradiation characterization data and measured in-reactor data are summarized for the six-rod instrumented Halden fuel assembly IFA-432. Postirradiation data are presented on three of the rods--Rods 1, 6, and 8--from this assembly. Rods 1 and 6 operated from December 1975 to June 1981 and accumulated peak burnups of 34 MWd/kgM. Fuel temperatures, gas pressures, and rod elongation were measured throughout the life of these rods, together with the corresponding power histories. Postirradiation observations on the rods are correlated with their design features and operating history. End-of-life fission gas release data demonstrate the influence of both as-fabricated grain size and the operating history.

Rods 1 and 6 experienced classic thermal feedback between fuel temperatures and gas release but had different rates of response, such that they attained lifetime peak temperatures at different burnups. Detailed measurements of the distribution of retained gas were performed on these two rods, and the results are compared with measured and calculated temperatures and with computer code predictions.

NUREG/CR-3091 V03: REVIEW OF WASTE PACKAGE VERIFICATION TESTS. Semiannual Report Covering The Period April-September 1983. SOO, P. Brookhaven National Laboratory. February 1984. 164pp. 8403070115. BNL-NUREG-51630. 22562:176.

This report is part of an ongoing task to specify tasks that may be used to verify that engineered waste package/repository systems meet the containment and controlled release performance objectives of 10 CFR Part 60. This report analyzes verification tests form carbon steel container corrosion and the testing methodologies that are appropriate for evaluating interaction effects between adjacent components in waste packages.

NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES. DEUTSCH, W. J. ; BELL, N. E. ; MERCER, B. W. Battelle Memorial Institute, Pacific Northwest Laboratories. February 1984. 58pp. 8403230177. PNL-4583. 22759:121.

In-situ leach uranium mines and pilot-scale test facilities are currently operating in the states of Wyoming, Texas, New Mexico and Colorado. This report summarizes the technical considerations involved in restoring a leached ore zone and its aquifer to the required level. Background information is provided on the geology and geochemistry of mineralized roll-front deposits and on the leaching techniques used to extract the uranium.

NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS. GREIMANN, L. ; FANOUS, F. ; KETELAAR, D. ; et al. Iowa State Univ., Ames, IA. January 1984. 132pp. 8402270207. 22397:225.

A probabilistic description of the seismic resistance of six containment vessels was developed. A random vibration approach and an advanced first order second moment reliability method were combined to predict the cumulative distribution of the resistance. Strain ductility was used as the failure criteria. BOSOR4 was used to determine linear vibration modes. Extreme Value Type I distributions were used to characterize the maximum responses (stress resultants). BOSOR5 was implemented to predict the proportional increase of these maximums which would cause buckling. Imperfections were included in the shell models. Only shell failure modes were considered.

NUREG/CR-3145 V02: GEOPHYSICAL INVESTIGATION OF THE WESTERN OHIO - INDIANA REGION. Annual Report, October 1982 - September 1983. POLLACK, H. N. ; CHRISTENSEN, D. Michigan, Univ. of, Ann Arbor, MI. March 30, 1984. 64pp. 8403230131. 22739:232.

Earthquake activity in the Western Ohio-Indiana region is monitored with a precision seismograph network which consists of none stations located in west central Ohio and four stations sited in Indiana. Five local and near regional earthquakes have been recorded during this report period. Three events were located outside the array, near the cities of Kalamazoo, Michigan, Cleveland, Ohio and Cincinnati, Ohio. Two events occurred in the center of the Ohio array. A focal mechanism was calculated for the larger of these two events. This focal mechanism shows mainly strike slip motion on steeply dipping nodal planes, striking at N35 degrees-45 degrees E and N50 degrees-70 degrees W. Both of these planes correspond to local structures.

NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE VICINITY OF SUBMERGED JETS USING ORSMAC. PARK, J. E. ; CROSS, K. E. Oak Ridge National Laboratory. December 1983. 130pp. 8403260286. ORNL/TM-8653. 22761:176.

As the world demand for electricity is met by large coal- or nuclear-fueled central generating stations, the effluent streams from these plants will have an increasingly important impact on the local environment. The Nuclear Regulatory Commission has a responsibility to assess the impact of proposed and operating nuclear power plants.

To support this NRC mission, a numerical algorithm and associated computer program have been developed to predict the temperatures occurring in the immediate vicinity (the near field) of a hot water discharge from a power plant. The algorithm is a natural extension of the classic Marker-and-Cell (MAC) technique developed by F.H. Harlow at the Los Alamos Scientific Laboratory. ORSMAC (Oak Ridge Simplified Marker and Cell), adds the logic for simple turbulence modeling, energy conservation and buoyancy effects to the MAC model. Modern numerical techniques have been used wherever practical.

In this report, the MAC and SMAC (Simplified MAC) algorithms are reviewed, and the ORSMAC algorithm is described. The finite difference analogs are given and discussed. Solutions for several sample problems are presented which illustrate the features of the ORSMAC algorithm. A complete FORTRAN listing is included with input and sample output.

NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2. OSBORNE, M.F.; LORENZ, R.A.; TRAVIS, J.R.; et al. Oak Ridge National Laboratory. March 1984. 68pp. 8404020277. 22873:223.

The second in a series of high-temperature fission product release tests was conducted for 20 min at about 1700 degrees C in flowing steam. The test specimen, a 20-cm-long section of a H.B. Robinson fuel rod that had been irradiated to a burnup of 28,000 MWd/t, was heated in an induction furnace mounted in a hot cell.

Posttest analyses of the furnace, the thermal gradient tube, filters, and other components of the experimental apparatus showed that about 50% of the (85)Kr, (137)Cs, and (129)I were released from the specimen during the test. In addition, approximately 2% of the (110m)Ag and (125)Sb along with smaller fractions of several other radionuclides were measured by gamma spectrometry. Spark-source mass spectrometric data from a limited number of samples showed significant releases of fission product tellurium and molybdenum, as well as structural (zirconium and tin) and furnace (primarily tungsten) materials. Metallographic examination of the fuel specimen revealed extensive fractures in the cladding, essentially complete oxidation to ZrO(2), and evidence of fuel-cladding interaction.

NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS. ERASLAN, A.; LIN, W.; SHARP, R.D. Oak Ridge National Laboratory. December 1983. 381pp. 8404030564. ORNL/TM-8401. 22878:176.

FLOWER is a three-dimensional computer code for simulating fast-transient, free-surface flow, temperature, and salinity conditions in rivers, estuaries, and coastal regions. The model also includes rotational effects (Coriolis force) and is capable of accomodating wind-stress coupling, a capability which enables the model to be applied to large water bodies with significant wind-driven currents, such as the Great Lakes. The mathematical formulation utilizes the integral form of the governing equations of the discrete-element method. In this method, interior flow regions are represented as rectangular elements of variable size, while impermeable boundary elements are constructed from truncated rectangles, thus allowing accurate representations of complex shorelines.

NUREG/CR-3181: QUANTITY AND NATURE OF LWR AEROSOLS PRODUCED IN THE PRESSURE VESSEL DURING CORE HEATUP ACCIDENTS - A CHEMICAL EQUILIBRIUM ESTIMATE. WICHNER, R. P.; SPENCE, R. D. Oak Ridge National Laboratory. March 1984. 43pp. 8404020263. ORNL/TM-8683. 22873:181.

The degree of vaporization of LWR core materials was estimated using a highly idealized procedure involving (1) specification of the phases that are present for both structural and fuel material; (2) estimation of the vapor pressures exerted by the individual components of each phase; and (3) assuming a degree of vaporization of each phase constituent, to allow equilibration between gaseous and condensed species within the assumed pressure vessel volume. Obviously, the degree of vaporization of many core materials is limited by other complex factors such as local mass transport conditions and solid-phase diffusion rates; however, the results obtained in this study serve to illustrate the types of driving forces for vaporization that are present and to give some indication of the composition of the vaporized material. Some comparisons are provided with estimated degrees of core vaporization from other sources.

In addition to estimated degrees of vaporization, information is included regarding the projected chemical forms of the condensed material for the expected range of oxygen potentials in the reactor vessel.

NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983. DODD, C. V.; DEEDS, W. E.; SMITH, J. H.; et al. Oak Ridge National Laboratory. March 1984. 22pp. 8404090145. ORNL/TM-8796/V3. 22971:262.

Eddy-current inspection is the most suitable method for rapid boreside evaluation of steam generator tubing. However, small flaws can be masked by the effects of harmless variables such as tube supports. To identify the critical properties accurately and reliably in the presence of extraneous signals caused by variations of unimportant properties, sufficient information is needed to identify harmful variations and to reject harmless ones. For this reason we have developed instrumentation capable of measuring both the amplitude and phase of the eddy-current signal at several different frequencies as well as computer equipment capable of processing the data quickly and reliably. Our most recent computer-optimized probe design uses an array of small flat "pancake" coils pressed against the inside wall of the steam generator tubing. Data have been taken with such coils on tubes with various combinations of abnormalities. Data were also taken for machined defects in tubes and flat plates to verify our basic flaw theory and to check our inversion theory for characterizing flaw properties from scans across the defect.

NUREG/CR-3224: AN ASSESSMENT OF CRBR CORE DISRUPTIVE ACCIDENT ENERGETICS. THEOFANOUS, T. G.; BELL, C. R. Los Alamos Scientific Laboratory. March 1984. 436pp. 8403230216. LA-9716-MS. 22740:001.

The results of an independent assessment of core disruptive accident energetics for the Clinch River Breeder Reactor are presented in this document. This assessment was performed for the Nuclear Regulatory Commission under the direction of the CRBR Program Office within the Office of Nuclear Reactor Regulation. It considered in detail the accident behavior for three accident initiators that are representative of three different classes of events; unprotected loss of flow, unprotected reactivity insertion, and protected loss of heat sink. The primary system's energetics accommodation capability was determined in terms of core events. This accommodation capability was found to be equivalent to a ramp rate of about 200 $/s applied to a classical two-phase disassembly. This accommodation capability was contrasted to the potential for energetic behavior which was shown to arise only in the advanced core disruption states (gravity driven recriticalities). The accident behavior was found to be dominated by neutronic activity that was bounded conservatively by 100 $/s events. Based on a qualitative probabilistic approach, we concluded that massive failure of the reactor head with associated early challenge to the containment building is physically unreasonable.

NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS. FENTON, D. L.; DALLMAN, D. J.; SMITH, P. R.; et al. Los Alamos Scientific Laboratory. January 1984. 13pp. 8402010111. LA-9929-MS. 22058:028.

A facility to test the plugging effects of combustion products on high-efficiency particulate air filters has been constructed. This facility can supply experimental data to support pressure-drop models of filter plugging under fire accident conditions, which are needed for use in an existing fire accident analysis computer code. The test facility includes a specially designed null-balance filter-weighing system. The resolution of this system is approximately 2 to 3 g out of 14 kg for a commercial 0.6- by 0.6-m filter. Using this system, commercial filters can be tested to provide data with which to correlate pressure drop and smoke aerosol mass accumulation and flow rate. Some recently accomplished tests and future test plans are discussed.

NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS. CARDWELL, R. G.; MOUL, D. A.; MCBRIDE, J. A.; et al. Union Carbide Corp. March 1984. 83pp. 8404170575. Y/DS-178. 24093:272.

This report provides an analysis of the literature and on-site data gathering relating to the actions of security forces at licensed nuclear power plants during safety-related emergencies. Literature search findings and results of on-site data gathering are furnished and subjected to analysis. Taking into account the analysis provided, appropriate recommendations are presented. Recommendations are keyed as to how improvements can be made in the regulatory approach and licensee planning and procedures as they relate to the subject matter under examination. In addition, certain technological problems and issues are examined within the context of the study. Appendices provide the results of the literature search, an annotated bibliography, the Data Collection Guide used, and additional details regarding certain aspects of the study that are relevant for further explication of the body of the report.

NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL. FEDERMAN, P. J.; BARTTER, W. D.; SIEGEL, A. I.; et al. Applied Science Associates, Inc. February 1984. 191pp. 8403300325. ORNL/TM-8755. 22842:007.

The job analysis of the electrician position is part of the work being done within a program that is developing and will evaluate a computer simulation model that will generate maintenance performance reliability data. This report is the fourth and last in a series of job analysis studies which characterize maintenance positions in nuclear power plants (NPPs). This characterization takes the form of detailed information about: (1) frequency of task performance, (2) time required for task performance, (3) the training required for adequate task performance, and (4) the perceived consequences of inadequate performance. Additionally, information is also presented about the mental and perceptual-motor loading imposed by various work functions.

A list of 199 tasks were compiled and verified through a number of visits to NPPs. Two formal questionnaires concerning these tasks were distributed to 24 NPPs and resulted in a 61% return rate. Results from the data received from the questionnaires formed the basis of this job analysis.

A statistically significant positive correlation was found between electrician training requirements and the perceived severity of adverse consequences following inadequate task performance. This and other information from this job analysis report will have direct influence on the development of the computer simulation model.

NUREG/CR-3285: PRE-TEST VISUAL EXAMINATION AND CRUD CHARACTERIZATION OF LWR RODS USED IN THE LONG-TERM, LOW-TEMPERATURE WHOLE ROD TEST. EINSIGER, R. E. ; COOK, J. A. Hanford Engineering Development Laboratory. March 1984. 82pp. 8404110020. HEDL-TME 83-9. 24002:223.

Westinghouse Hanford Company (WHC) and EG&G-Idaho are jointly conducting a testing program to provide information that the Nuclear Regulatory Commission (NRC) can use to establish a licensing position relative to long-term, low-temperature performance of spent fuel rods in dry storage. The tests investigate the performance of intact and defected light water reactor (LWR) spent fuel rods in inert gas and unlimited air environments. The tests consist of placing four H. B. Robinson Unit 2 pressurized water reactor (PWR) and four Peach Bottom-II boiling water reactor (BWR) spent fuel rods in a furnace at 230 degrees C for a maximum of 50 months. Interim and final examinations are planned to assess behavior during the test. To establish the initial condition of the test rods, visual examinations of the test rods and crud examinations of companion rods were conducted. In addition, an open literature evaluation of crud characteristics was compiled.

NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS. BEARE, A. N. ; DORRIS, R. E. ; BOVELL, C. R. ; et al. General Physics Corp. January 1984. 190pp. 8403300342. SAND83-7095. 22844:070.

The purposes of this study were to empirically establish error rates for control selection and operation during the performance of proceduralized tasks in nuclear power plant control rooms during simulated casualties, and to compare the observed error rates with the human error probabilities in the Handbook of Human Reliability Analysis With Emphasis on Nuclear Power Plant Applications, NUREG/CR-1278

NUREG/CR-3329 V03: THERMAL/HYDRAULIC ANALYSIS RESEARCH PROGRAM QUARTERLY REPORT JULY-SEPTEMBER 1983. THOMPSON, S. L. Sandia

Laboratories. February 1984. 84pp. 8402280123. SAND83-1171. 22430:123.

The RELAP5 independent assessment project at Sandia National Laboratories is part of a multi-faceted effort sponsored by the NRC to determine the ability of various system codes to predict the detailed thermal/hydraulic response of LWRs during accident and off-normal conditions. The version used for the FY82 assessment project {1,2,3,4} was RELAP5/MOD1/CYCLE14 {5}, the latest publicly released version available at the time this project was begun.

Brief individual status reports on ongoing LOFT and Semiscale NC and UT calculation (all being done with RELAP5/MOD1), and the MOD1.5 BCL analyses, are given in the main body of this quarterly, as is the current status of the new UHI plant analyses (with both TRAC-PF1 and RELAP5). During this quarter, calculations were completed for Semiscale degraded heat transfer natural circulation tests S-NC-3 and S-NC-4, for Semiscale transient natural circulation test S-NC-8, and for LOFT large break test L2-5.

NUREG/CR-3334 V02: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR APRIL-JUNE 1983. PUGH,C.E. Oak Ridge National Laboratory. January 1984. 68pp. 8401230066. ORNL/TM-8787/V2. 21921:001.

The Heavy-Section Steel Technology (HSST) Program is an engineering research activity conducted by the Oak Ridge National Laboratory for the Nuclear Regulatory Commission. The program comprises studies related to all areas of the technology of materials fabricated into thick-section primary-coolant containment systems of light-water-cooled nuclear power reactors. The investigation focuses on the behavior and structural integrity of steel pressure vessels containing cracklike flaws. Current work is organized into seven tasks: (1) program administration and procurement, (2) fracturemechanics analyses and investigations, (3) investigations of irradiated materials, (4) thermal-shock investigations, (5) pressure vessel investigations, (6) stainless steel cladding investigations, and (7) environmentally assisted crack growth studies.

NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983. PUGH,C.E. Oak Ridge National Laboratory. March 1984. 120pp. 8403300317. ORNL/TM-8787/V3. 22826:067.

See NUREG/CR-3334,V02 abstract.

NUREG/CR-3351: SECURITY OFFICER TACTICAL TRAINING ISSUES INVOLVING ESS EQUIPMENT. ROUNTREE,S.L. Sandia Laboratories. January 1984. 44pp. 8402060336. SAND82-2933. 22107:272.

Security officer tactical training issues are discussed in relation to the possible implementation of the Tactical Improvement Package (TIP), utilizing the Engagement Simulation System (ESS) equipment, by nuclear power plant licensees for security officer tactical training. The ESS equipment provides the capability to simulate engagement conditions between adversaries armed with weapons which have harmless laser transmitters. A brief discussion of the TIP is presented, along with some concerns and considerations in the use of the TIP.

NUREG/CR-3359 V03: PHYSICS OF REACTOR SAFETY. Quarterly Report, July-September 1983. * Argonne National Laboratory. January 1984. 15pp. 8401230062. ANL-83-11 V03. 21931:075.

This quarterly progress report summarizes work done during the months of July-September 1983 in Argonne National Laboratory's Applied Physics and Components Technology Divisions for the Division of Reactor Safety Research of the U.S. Nuclear Regulatory Commission. The work in the Applied Physics Division includes reports on reactor safety modeling and assessment by members of the Reactor Safety Appraisals Section. Work on reactor core thermal-hydraulics is performed in ANL's Components Technology Division, emphasizing 3-dimensional code development for LMFBR accidents under natural convection conditions. An executive summary is provided including a statement of the findings and recommendations of the report.

NUREG/CR-3359 V04: PHYSICS OF REACTOR SAFETY. Quarterly Report, October-December 1983. * Argonne National Laboratory. February 1984. 22pp. 8404020217. ANL-83-11 V04. 22876:329.

See NUREG/CR-3359, V03 abstract.

NUREG/CR-3389: VALENCE EFFECTS ON THE SORPTION OF NUCLIDES ON ROCKS AND MINERALS. MEYER, R.E.; ARNOLD, W.D.; CASE, F.I. Oak Ridge National Laboratory. February 1984. 49pp. 8404020260. ORNL-5978. 22845:284.

Estimation of the rates of migration of nuclides from nuclear waste repositories requires knowledge of the interaction of these nuclides with the components of the geological formations in the path of the migration. These interactions will be dependent upon the valence state and speciation of the nuclide. Experiments designed to measure interaction of multivalent nuclides and minerals must therefore include some form of valence state control. An electrochemical method of valence state control was developed which makes use of a porous electrode in a flow system containing a column of the adsorbent. By use of this method and solvent extraction analyses of the valence states, a number of reactions of interest to HLW repositories were investigated. These include the reduction of Np(V) and Tc(VII) by crushed basalt and other minerals. For the reduction of Np(V) by basalt, the experiments indicate that the sorption of basalt increases with pH and that most of the Np is reduced to Np(IV) which is very difficult to remove from the basalt even if oxygenated tracer-free solution is added to the solution. For the experiments with Tc(VII), the results are considerably more complicated. The results of these experiments are used to assess some of the techniques and methods currently used in safety analyses of proposed HLW repositories.

NUREG/CR-3390: DOCUMENTATION AND USER'S GUIDE: UNSAT2 - VARIABLY SATURATED FLOW MODEL. (Including 4 Example Problems). DAVIS, L.A.; NEUMANN, S.P. Water, Waste & Land, Inc. December 1983. 218pp. 8403230197. WWL/TM-1791-1. 22742:001.

This report presents documentation and a user's guide for program UNSAT2. Mathematical equations and physical principles utilized to develop the code are presented in Section 2. The numerical approach used (Galerkin Finite Elements) is presented in Section 3. Section 4 presents an overview of how problems should be set up to properly use the code while detailed input instructions are presented in Section 5. Output produced by the code is discussed in Section 6. Four example problems, including sample input data sets and output data, are presented in Section 7. Program information and a complete listing of the program is provided in Section 8. This report was prepared as part of a project in which the NRC staff was presented a training course on how to properly use this computer program. Program UNSAT2 can be utilized to analyze flow in unsaturated, partially unsaturated, or fully saturated flow regions. It is anticipated that the NRC will use the model for checking information provided by a licensee, for evaluation alternative sites and designs for waste disposal, and for comparing their results with results from other methods of solution.

NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants. MELBER, B. D.; OLSON, J.; SCHREIBER, R. E.; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. March 1984. 61pp. 8404020220. PNL-3786. 22875:276.

The provisions of engineering expertise on shift at commercial nuclear power plants has mainly taken the form of the Shift Technical Advisor (STA). This person, acting in a capacity that is part engineer and part operator, is expected to advise the operations crew in the event of an emergency and review plant operating experience during normal circumstances. The position was mandated by the Nuclear Regulatory Commission following the incident at Three Mile Island. T..s report expands on a growing body of knowledge regarding the effectiveness of the STA. The new data presented here come from interviews with plant personnel and utility officials from nine sites. Researchers from the Pacific Northwest Laboratory (PNL) interviewed plant personnel, including the STA and immediate management, the shift supervisor and management, the training department, and ancillary staff, all of whom affect the intended performance of the STA. The conclusions of the report are that the design of the STA position results in limited contribution during an emergency; more comprehensive ways should be sought to provide the variety and specificity of engineering expertise needed during such times.

NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983. BELJWAS, T. E.; HORSCHEL, D. S.; JUNG, J.; et al. Sandia Laboratories. February 1984. 44pp. 8402280014. SAND83-1482. 22429:308.

This report contains a description of work performed in the second quarter of FY83 on the Containment Integrity Program. Plans for future work are presented. The overall objective of the program is the qualification of methods for reliably predicting the capability of containment structures to function under loadings caused by severe accidents and extreme environments. Both analytical and experimental efforts are under way. The experiments are tests of entire containment for qualifying the analytical methods.

NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly Progress Report For April-June 1983. ADAMS, R. E.; TOBIAS, M. L. Oak Ridge National Laboratory. February 1984. 52pp. 8403150219. ORNL/TM-8849/V2. 22662:087.

This report summarizes progress for the Aerosol Release and Transport Program sponsored by the Nuclear Regulatory Commission's Office of Nuclear Regulatory Research, Division of Accident

Evaluation, for April-June, 1983. Topics discussed include (1) several capacitor discharge vaporization experiments in the CRI-III and Fuel Aerosol Simulant Test facilities, (2) descriptions of dry atmosphere test 511 and steam atmosphere 505 with iron oxide aerosols in the NSPP facility, (3) technical support work for the aerosol test program at Marviken, Sweden, (4) US-German exchange experiment proposals concerning aerosols containing simulant fission products, (5) a core melt test to observe metal-interaction effects in cladding degradation, (6) progress in construction of a 10 kg core-melt induction furnace, (7) analytical work in support of the FAST/CRI-III experiments, (8) aerosol code implementation, (9) NAUA code validation studies, and (10) steam-only experiments in the NSPP.

NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983. STAHL, D. ; MILLER, N. E. Battelle Memorial Institute, Columbus Laboratories. March 1984. 90pp. 8403300294. 22826:203.

Data from the preliminary glass leaching experiments were analyzed, and methods for leachate analysis were developed. Testing conditions were determined for the leaching pilot experiment, and a flow chart for devitrification calculations was developed. Methods for evaluating spent fuel and radiation effects were reviewed. Experiments in the internal corrosion task were essentially completed, and data analysis continues. External corrosion studies indicated low general corrosion rates for the canister; however, some relatively deep pits were found on one specimen in the vapor phase. Further experiments will be conducted. Electrochemical studies indicate that steel can passivate and become susceptible to localized corrosion in basaltic groundwater. Fracture toughness tests of cast and wrought low carbon steels in nitrogen and hydrogen were initiated. Hydrogen reduced the tearing modulus of the steel. Hydrogen absorption in cast and wrought steel in basaltic environments is being evaluated. Results of computer simulations of groundwater radiolysis were compared with results from the general-corrosion correlation. Gamma energy deposition was calculated for commercial high-level waste. Efforts in correlation development focused on pitting corrosion and water chemistry with emphasis on pit-growth kinetics. A quality assurance program audit was initiated.

NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT. BOHN, M. P. ; SHIEH, L. C. ; WELLS, J. E. ; et al. Lawrence Livermore Laboratory. January 1984. 324pp. 8402210021. UCRL-53483. 22322:001.

The risk analysis included a detailed seismological evaluation of the region around Zion, Illinois which provided the earthquake hazard function and an appropriately randomized set of 180 time histories. These time histories were used as input to dynamic structural response calculations for four separate Zion buildings. Detailed finite element models of the buildings were used. Calculated time histories at piping support points were then used to determine moments throughout critical piping systems. Twenty-one separate piping systems were analyzed. Finally, the responses of piping and safety system components within the buildings were combined with probabilistic failure criteria and event tree/fault tree models of the plant safety systems to produce an estimate of the probability of core melt and radioactive release due to the occurrence of earthquakes.

The computed median probability of core melt was found to be 3E-5 per year. The upper (90%) bound on the core melt probability was computed to be 2E-5 per year, and lower (10%) bound was computed to be IE-7 per year.

NUREG/CR-3435: A NEW IMPLICIT NUMERICAL SOLUTION SCHEME IN THE COMMIX-1A COMPUTER PROGRAM. DOMANUS, H. M. ; SCHMITT, R. C. ; SHA, W. T. ; et al. Argonne National Laboratory. January 1984. 52pp. 8402060339. ANL-83-64. 22107:348.

The report describes, in detail, the new fully-implicit numerical solution procedure implemented in the COMMIX-1A computer code. This procedure, named SIMPLEST-ANL, is similar to the SIMPLE/SIMPLER procedure developed at Imperial College, London. SIMPLEST-ANL has been implemented as an additional option to the previously implemented semi-implicit procedure. The new procedure permits the use of larger time-step sizes without causing any instability in the solution of system equations. It is advantageous specifically for steady-state analysis of slowly varying long-transient problems. SIMPLEST-ANL requires less computer storage than the SIMPLER procedure with comparable or better computing efficiency.

NUREG/CR-3439 V01: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 1. SMITH, C. M. Oak Ridge National Laboratory. January 1984. 73pp. 8401230039. ORNL/TM-8862/V1. 21931:322.

This report documents the Power Spectral Density Recognition (PSDREC) Continuous On-Line Reactor Surveillance Program. Volume 1 of this manual is a description of the major concepts and philosophy of the PSDREC surveillance system. Volume 1 is of interest to readers who desire to understand how the system operates. Volume 2 is the appendices which contain detailed information useful only to a reader involved with the computer implementation of this system. Volume 1 has been given a general distribution. Volume 2 is available from the author upon request.

NUREG/CR-3439 V02: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 2. SMITH, C. M. Oak Ridge National Laboratory. January 1984. 139pp. 8401230690. ORNL/TM-8862/V2. 21900:300.

See NUREG/CR-3439, V01 abstract.

NUREG/CR-3444 V01: THE IMPACT OF LWR DECONTAMINATIONS ON SOLIDIFICATION, WASTE DISPOSAL AND ASSOCIATED OCCUPATIONAL EXPOSURE. Annual Report. DAVIS, M. S. Brookhaven National Laboratory. January 1984. 124pp. 8402170494. BNL-NUREG-51699. 22304:202.

This report describes generic and specific aspects of hard and soft chemical decontaminations and considers the radiation and thermal stability of the reagents involved. Disposal options for LWR decontamination wastes are reviewed and advantages and disadvantages related to the options are discussed. Studies indicating the potential impact of these wastes on a shallow land burial ability to retain radionuclides are summarized. Processes being considered for the management of spent ion-exchange resins are reviewed. Problems associated with the state-of-the-art of incineration, and chemical digestion are evaluated. The solidification and disposal of decontamination wastes are considered with respect to criteria given in the Licensing Rule for Land Disposal of Radioactive Waste, 10 CFR 61. These are evaluated with respect to possible solidification in cement, bitumen, and plastics. The various options in mixing decontamination wastes with normal LWR resin waste are discussed with respect to their impacts on occupational exposure.

NUREG/CR-3448: URANIUM HOLDUP MODELING. PICARD, R. R.; MARSHALL, R. S. Los Alamos Scientific Laboratory. January 1984. 10pp. 8402170498. LA-9853-MS. 22320:001.

Statistical modeling of nuclear materials holdup in processing facilities can play an important role in operation, variability of process conditions, quality of measurements, and measurement standards impact the value of model-based estimates. Recognition of both the benefits and the limitations of model-based estimates and the periodic updating of such estimates are essential to maintaining a credible holdup estimation model.

NUREG/CR-3449: LABORATORY EVALUATION OF LIMESTONE AND LIME NEUTRALIZATION OF ACIDIC URANIUM MILL TAILINGS SOLUTION. Progress Report. OPITZ, B. E.; DODSON, M. E.; SERNE, R. J. Battelle Memorial Institute, Pacific Northwest Laboratories. February 1984. 50pp. 8403070118. 22562:004.

Experiments were conducted to evaluate a two-step neutralization scheme for treatment of acidic uranium tailings solutions. Tailings solutions from Lucky Mc and Exxon Highland Mills were neutralized with limestone, CaCO(3), to an intermediate pH of 4.0 or 5.0, followed by lime, Ca(OH)(2), neutralization pH 7.2. The combination limestone/lime treatment methods, CaCO(3) neutralization of pH 4 followed by neutralization with Ca(OH)(2) to pH 7 resulted in the highest quality effluent solution with respect to EPA's water quality guidelines. The combination method is the most cost effective treatment procedure tested in our studies.

Experiments to evaluate the optimum solution pH for contaminant removal were performed on tailings solutions utilizing only Ca(OH)(2) as the neutralizing agent. The data indicates solution neutralization above pH 7.2 does not significantly increase removal of pH dependent contaminants from solution.

Column leaching experiments were performed on the neutralized sludge material (the precipitated material which forms as the acidic tailings solutions are neutralized). The sludges were contacted with laboratory prepared ground water and several effluent pore volumes were collected. Effluent solutions were analyzed for macro ions, trace metals and radionuclides to evaluate the effectiveness of attenuating contaminants in sludges formed during neutralization.

NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS. BRAY, M. A.; NELSON, W. R.; BLACKMAN, H. S.; et al. EG&G, Inc. January 1984. 34pp. 8402030099. EGG-2272. 22090:340.

An experiment was performed during 1983 that measured performance of nuclear plant operators with and without a computer-based operator aid. This report discusses the results of that experiment and their implications for design and regulation of advanced computer aids in nuclear control rooms. The aid tested is called a response tree and is intended to help operators properly align a piping system despite component or support system failures. In the experiment, 28 reactor operator subjects were required to align a system to inject coolant and stop a temperature excursion in a simulated reactor. The experiment did not show an improvement in operator performance when the response tree aid was used. More important, the experiment did produce several conclusions related to the design and evaluation of computer aids in nuclear control rooms.

NUREG/CR-3477: CONCENTRATIONS OF COPPER-BINDING PROTEINS IN LIVERS OF BLUEGILLS EXPOSED TO INCREASED CONCENTRATIONS OF SOLUBLE COPPER. HARRISON, F. L. ; LAM, J. R. Lawrence Livermore Laboratory. January 1984. 30pp. 8402060333. UCRL-53487. 22107:317.

We conducted experiments to determine the concentrations of copper in effluents and the durations of chronic exposure to sublethal levels of copper that bluegills can tolerate without adverse effects. Groups of young bluegills were exposed to water regulated to pH 5.5 that contained either no additional copper or 20, 40, 80 or 160 mg/L additional copper. In one tank, water was regulated to pH 7 and the copper to 80 mg/L.

Liver metalloproteins from the bluegills were separated into a low molecular-weight (LMW) protein fraction, which contains metallothioneins (MTs), and into intermediate molecular-weight (IMW) and high molecular-weight (HMW) fractions, which contain metalloenzymes (MEs), using high performance liquid chromatography. Large differences in quantities of copper associated with metalloproteins were found. Copper concentrations in the LMW, IMW, and HMW protein fractions and in the pellet (insoluble fraction) increased with increased exposure concentration and time. Bluegills maintained in 80 mg Cu/L water at pH 5.5 accumulated higher concentrations of copper in the HMW and IMW protein fractions and lower concentrations in the LMW protein fraction and pellet than those maintained in 80 mg Cu/L water at pH 7. Mortality was dependent on exposure concentration and duration and appeared to be related to the exceeding of the MT-detoxification capability.

NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS. HARRISON, F. L. Lawrence Livermore Laboratory. January 1984. 98pp. 8402130117. UCRL-53488. 22213:198.

The concentrations of copper in the abiotic and biotic compartments of freshwater ecosystems, and the effects on biota of increased amounts of copper in the water and sediments are reviewed. Data compiled and discussed include the quantities and physicochemical forms of copper in the water column, the concentrations of copper in the bed-load sediments and interstitial waters, and the concentrations of copper in primary producers, annelid worms, molluscs, crustacea, aquatic insects, minor invertebrates, and fishes. In addition, the acute and sublethal effects of copper on the same groups of biota are presented, as well as data on copper concentration factors. This information can be used to: (1) determine for different types of ecosystems the ranges of copper concentrations that occur in nature, (2) identify ecosystems that are or may be impacted by copper released from industrial and urban sources, and (3) assess the effects on biota of the use of copper alloys in nuclear power station cooling systems.

NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS. HEBBLE, T. L. ; CANONICO, D. A. ; EDMONDS, D. P. ; et al. Oak Ridge National Laboratory. January 1984. 16pp. 8402010115. ORNL-6024. 22058:007.

An American Society of Mechanical Engineers task group on stainless steel weld materials was organized to determine the need for ferrite measurements of production welds required by the U.S. Nuclear Regulatory Commission Regulatory Guide 1.31 (Rev. 1). The task group studied paired ferrite measurements [i.e., calculated and measured ferrite numbers (FNs) for the material qualifications versus measured ferrite numbers for corresponding production welds (PWs)]. Our purpose was to compare delta-ferrite content as measured in the filler metal weld qualification pad with that in the resultant PW. Welds made predominantly by three common processes (submerged arc, shielded metal arc, and gas tungsten arc) were included in the study. Weld metals investigated included types 308, 308L, 316, and 316L stainless steel. An initial evaluation of the paired ferrite measurements was made by the task group, and specific conclusions and recommendations were made. We describe the analysis of the data and the conclusions drawn.

The data base consisted of a heterogeneous collection of 1449 paired ferrite measurements for several forms and combinations of types 304 and 316 stainless steel pipe qualification pad and production welds. Qualification pad values ranged from 5 to 15 FN, and corresponding values for the PWs ranged from 2.3 to 17.5 FN. Only two PW ferrite numbers were less than 3. For qualification weld ferrite numbers less than 14, the median PW ferrite number was in reasonable agreement. However, the results show a wide seatter.

As a result of this analysis and the task group evaluation, we concluded that the requirements of Regulatory Guide 1.31 on the measurement of ferrite in PWs are not necessary and that a ferrite number of 5 in the qualification welds will, in most cases, result in PW ferrite contents greater than 3 FN.

NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA. WOO, H. H. Lawrence Livermore Laboratory. January 1984. 44pp. 8402210019. UCRL-53490. 22323:115.

This report presents the results of studies on the current regulatory position on postulated pipe rupture location criteria and recommends future licensing regulations.

The report contains five parts. The first part highlights the current regulatory positions on criteria for postulated pipe rupture locations. The second part reviews data on nuclear piping failures related to the failure locations in the piping systems. The third part presents a probabilistic assessment of three nuclear piping lines under fatigue loadings. The fourth part recommends modifying the criteria and scopes future work. the fifth part, Appendix A, provides the validation results for the stress corrosion cracking model. The failure case chosen for comparison with the analytical result is a recirculation line safe-end cracking incident in a boiling water reactor.

NUREG/CR-3484: TRAN B-1: EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL. MCARTHUR, D. A.; MAST, P. K. Sandia Laboratories. January 1984. 32pp. 8402210024. SAND83-1916. 22343:281.

The TRAN B-Series experiments are being conducted at Sandia National Laboratories to investigate the characteristics of fuel removal/freezing through the upper axial blankets of a liquid-metal fast-breeder reactor during the transition phase of a hypothetical core-disruptive accident. The first experiment in this series, TRAN B-1, was performed in February 1983 and the results are reported herein. This experiment involved the injection of molten UO(2) into an annular flow channel. Previous experiments had shown crusts to be stable on the inside of a cylindrical flow channel. This experiment was intended to investigate whether the conclusion of crust stability could be extended to freezing on the outside of cylindrical rods (the more prototypic geometry of the upper axial blankets).

The results of the TRAN B-1 experiment, consisting of data from online instrumentation and postirradiaton examination, indicate that the crusts on both inner and outer surfaces of the annular channel were stable during the duration of the fuel flow. Thus, a conduction-limiting model could be used to describe the fuel-flow/freezing process. However, the experiment data also indicated that the crusts were less stable on the outside of a rod than on the inside of a cylinder late in time.

NUREG/CR-3490: THE ROLE OF GEOCHEMICAL FACTORS IN THE ASSESSMENT AND REGULATION OF GEOLOGIC DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE. O'KELLEY, G. D. ; MEYER, R. E. Oak Ridge National Laboratory. March 1984. 38pp. 8404100524. ORNL-5988. 22981:001.

Analyses of the performance of a high-level nuclear waste repository will require a detailed study of the chemical factors involved in the interaction of water-mobilized nuclides with the geologic formations of the host repository, including sorption phenomena, redox processes, hydrolysis, complexation, solubility, and formation of polymeric and colloidal forms of the nuclides. A discussion and review of these factors is given along with their pertinence to the migration of the nuclides and the development of computer codes for the prediction of this migration. Much of the chemistry of the nuclides of interest is very sensitive to pH and redox conditions and, in general, increase of acidity and oxidizing power of the groundwater could have serious consequences, additional concerns are the formation of negatively charged species, which tend to exhibit very low adsorption, and the formation of insoluble products through redox processes. Because of the great complexity of the chemistry involved, it will probably be necessary to develop techniques of prediction which do not take into account all reactions but only those which are thought to limit system performance.

NUREG/CR-3491: OCA-II, A CODE FOR CALCULATING THE BEHAVIOR OF 2-D AND 3-D SURFACE FLAWS IN A PRESSURE VESSEL SUBJECTED TO TEMPERATURE AND PRESSURE TRANSIENTS. BALL, D. G. ; CHEVERTON, R. D. ; DRAKE, J. B. ; et al. Oak Ridge National Laboratory. February 1984. 110pp. 8402210073. ORNL-5934. 22323:189.

The OCA-II computer code, like its predecessor OCA-I, performs the thermal, stress, and linear elastic fracture-mechanics analysis for long flaws on the surface of a cylinder that is subjected to thermal and pressure transients. OCA-I represents a revised and expanded version of OCA-I and includes as new features (1) cladding as a discrete region, (2) a finite-element subroutine for calculating the stresses, and (3) the ability to calculate stress intensity factors for certain three-dimensional flaws, for two-dimensional circumferential flaws on the inner surface, and for both axial and circumferential flaws on the outer surface. OCA-I considered only inner-surface flaws. An option is included in OCA-II that permits a search for critical values of fluence or nil-ductility reference temperature corresponding to a specified failure criterion. These and other features of OCA-II are described in the report, which also includes user instructions for the code.

NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30,1983. BALL,S.J.; CLEVELAND,J.C.; HARRINGTON,R.M.; et al. Oak Ridge National Laboratory. January 1984. 13pp. 8402060457. 22115:008.

Work on postulated severe accident sequence code development and application continued both for the Fort St. Vrain and 2240-MW(t) lead plant designs. Initial experiments on high-temperature gas-cooled reactor (HTGR) fission-product release and transport were run in an existing high-temperature (>2000 degree C) graphite-resistance furnace. Initial work was done on a cooperative study of HTGR safety research needs.

NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER,1983. BALL,S.J.; CLEVELAND,J.C.; HARRINGTON,R.M.; et al. Oak Ridge National Laboratory. March 1984. 26pp. 8404100531. ORNL/TM-8921/V3. 22979:315.

Work continued on code development aimed at establishing capabilities for licensing and source-term calculations for design. Refinements were made in liner cooling system (LCS) models. Three runs were completed in the fission-product release and transport studies, indicating rapid diffusion of rare earths through graphite at high temperatures (2700 K). Benchmarking work continued for the BLAST steam generator code. Initial plans were developed for large-scale thermal-hydraulic tests for verifying LCS and core bypass flow models.

NUREG/CR-3496: REVIEW OF A TEST PROGRAM FOR QUALIFYING THE SOLIDIFICATION OF EPICOR II RESINS WITH CEMENT. BARLETTA,R.E.; DAVIS,R.E. Brookhaven National Laboratory. January 1984. 32pp. 8402210026. BNL-NUREG-51712. 22323:001.

The results and recommendations of the resin solidification test program conducted by Metropolitan Edison Company are reviewed. The original purpose of this program was to recommend a formulation or range of formulations suitable for the cement solidification of first-stage Epicor-II liners generated during cleanup activities at Three Mile Island. This was to be accomplished through a systemmatic laboratory and full-scale testing program using ionexchange materials supplied by Epicor, Incorporated. Events, however, caused the truncation of the full-scale testing. Hence, a formulation was recommended based upon the results of laboratory scale testing. Failure to achieve satisfactory solidification in a single full-scale test using this formulation was observed. The unqualified conclusion that these tests demonstrate that the Epicor-II spent ion exchange media can be successfully solidified in cement appears to be unwarranted. Through a full-scale testing program, some of the deficiencies of the full-scale waste form may be resolved by simple technical modification or implementation of a process control program Met-Ed/GPU had recognized the need for additional full-scale testing. Further, conflicting results of the screening and primary phases of the Met-Ed/GPU test program and the general conclusion of the Met-Ed/GPU study are noted in this report.

NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT. HILL,L.J.; RAINEY,J.A.; TEPEL,R.C.; et al. Oak Ridge National Laboratory. January 1984. 47pp. 8403200358. ORNL/TM-8684. 22709:010.

The paper presents an analysis of an actual 24-month nuclear power plant licensing delay under alternate assumptions about regulatory practice sources of replacement power, and the cost of the plant. The analysis focuses on both the delay period and periods subsequent to the delay. The methodology utilized to simulate the impacts involved the recursive interaction of a generation costing program to estimate fuel replacement costs and a financial regulatory model to concomitantly determine the impact on the utility, its ratepayers, and security issues. The results indicate that a licensing delay has an adverse impact on the utility's internal generation of funds and financial indicators used to evaluate financial soundness. The direction of impact on electricity rates is contingent on the source of fuel used for replacement power.

NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE. YODER, G. L.; ANKLAN, T. M.; MORRIS, D. G.; et al. Oak Ridge National Laboratory. January 1984. 84pp. 8401300018. ORNL/TM-8794. 22027:334.

A series of eight steady-state rod bundle tests has been performed at the Oak Ridge National Laboratory in the Thermal Hydraulic Test Facility to gather data in both the low flow film boiling region and high flow steam cooling region. This test series includes experiments both with and without liquid entrainment above the dryout point.

Bundle fluid conditions were calculated using steady-state energy and mass conservation equations. The experimental heat transfer data have been compared to several film boiling heat transfer correlations and one vapor correlation. Results of these comparisons support the conclusions reached in the analysis of prior ORNL transient and steady state tests (3.03.6AR, 3.06.6B, 3.08.6C, series 3.07.9, series 3.02.10, and series 3.09.10). Results indicate that the Dougall-Rohsenow correlation often overpredicts the heat transfer coefficient, while the Groeneveld 5.7 and Condie-Bengston IV correlations tend to underpredict, however they are in better agreement with the data. The Groeneveld-Delorme correlation underpredicts heat fluxes. The Dittus-Boelter correlation was evaluated only when equilibrium qualities were greater than one, and tends to overpredict the heat transfer coefficient.

NUREG/CR-3508: STANDARD SETTING STANDARDS: A SYSTEMATIC APPROACH TO MANAGING PUBLIC HEALTH AND SAFETY RISKS. FISHCHOFF, B. Decision Research, Inc. * Oak Ridge National Laboratory. February 1984. 66pp. 8403190444. ORNL/SUB-7576/3. 22681:004.

Standards are an effective means of managing hazardous technologies. This guide presents a general framework for the design development and implementation of safety standards. Particular strategies along with inherent strengths and weaknesses are described.

NUREG/CR-3512: RAPID FIELD METHOD FOR THE CONCENTRATION OF RADIOIODINE FROM MILK. SOLBRIG, R. M.; HUCHTON, R. L.; MOTES, B. G. Exxon Nuclear Co., Inc. (subs. of Exxon Corp.). February 1984. 24pp. 8402280010. ENICO-1137. 22429:280.

The development and testing of a practical field method for the collection of radioiodine from milk is reported. The technique is simple, rapid and relatively inexpensive to perform and yields a good iodine collection efficiency. The batch method involves adding a 250-ml volume of Dowex 1-x8 anion exchange resin to 3.5 liters of milk, mixing at a rate of 30 rotations per minute for three minutes, separating the resin and milk by pouring the mixture through a wire-screened canister, and rinsing the resin with 200-ml of distilled water. Advantages of the procedure include: minimal equipment and personnel training; an inexpensive industrial-grade resin; a total of ten minutes to complete; and an adaptability of the wire-screened canister to different geometries for direct counting. Additionally, the total collection efficiency of 81 + or - 6% is relatively independent of temperature, iodide concentration, mixing rate and mixing time.

NUREG/CR-3522 V01: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIALS, VOL 1: U Oxide Plus Graphite Powder. SPRINKLE, J.K.; LIKES, R.N.; PARKER, J.L.; et al. Los Alamos Scientific Laboratory. January 1984. 41pp. 8402010368. LA-9910-MS V01. 22061:001.

This manual describes the fabrication of reference materials for use in gamma-ray-based nondestructive assay of low-densit, uranium-bearing samples. The sample containers are 2 liter bottles. The reference materials consist of small amounts of UO(2) spread throughout a graphite matrix. The (235)U content ranges from 0 to 100 g. The manual also describes the far-field procedure used with low-resolution detectors.

NUREG/CR-3522 V02: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIAL. Volume 2: Thin Metal Foils Of Highly Enriched Uranium. SPRINKLE, J.K.; LIKES, R.N.; SMITH, H.A. Los Alamos Scientific Laboratory. January 1984. 15pp. 8402010313. LA-9910-MS V02. 22046:210.

This manual describes the fabrication of reference materials for use in gamma-ray-based nondestructive assay of small high-density uranium samples. The sample containers are small Petri dishes. The reference materials consist of thin circular discs of highly enriched uranium metal foil. The 235U content ranges from 0.2 to 10 g. The manual also describes the assay procedure used with low-resolution detectors.

NUREG/CR-3523: A RANKING SCHEME FOR MAKING DECISIONS ON THE RELATIVE TRAINING IMPORTANCE OF POTENTIAL NUCLEAR POWER PLANT MALFUNCTIONS. SELBY, D.L.; HENSLEY, W.T. Oak Ridge National Laboratory. February 1984. 121pp. 8403300306. ORNL/TM-8950. 22842:190.

The research summarized in this report was conducted as part of a program entitled "Nuclear Power Plant Entry Level Qualification and Training." A process is developed to assist in the selection of plant malfunctions which should be specifically addressed as part of the training program, and further guidance is given for determining which of those malfunctions should be included in simulator training. Consequences (C), difficulty (D), and frequency (F) rating forms are developed to determine the relative importance for training of any system malfunction. Plant malfunctions were categorized for 46 plant systems. Thirteen of these malfunction categories were then used to demonstrate the C-D-F rating forms.

NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS. PADOWSKI, M.Z.; TALEYARKHAN, R.; LAHEY, R.T. Oak Ridge National Laboratory. January 1984. 75pp. 8401260101.

ORNL/SUB/81-908. 21971:085.

This report summarizes the results of developmental work at Rensselaer Polytechnic Institute (RPI) of methods of core modeling for use in the analyses of the progression of accidents that involve core damage in BWRs. Accomplishments include the development of an analytical model for channel box and control rod heatup, oxidation, and melting, and a mechanistic core-wide meltdown and relocation model. These are provided in the form of a FORTRAN subroutine denoted MELRPI that can be exercised with an existing version of the MARCH code. The modeling concept and the modular structure employed in MELRPI have been designed so that new models subsequently developed for specific phenomena can be rapidly incorporated when they become available.

NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS. CHUANG, T. Y.; LU, S. C.; BENDA, B. J.; et al. Lawrence Livermore Laboratory. March 1984. 72pp. 8404120384. UCRL-53491. 24035:062.

The Technical Committee on Piping Systems of the Pressure Vessel Research Committee has proposed two modifications that affect seismic analysis of piping systems to regulatory guides. One modification would change damping values for piping systems specified in Regulatory Guide 1.122.

In this study we quantified the reduction in piping responses of three piping systems in the Zion nuclear power plant resulting from these two modifications, separately and in combination. We concluded that: The proposed damping values reduce piping response substantially; and the proposed alternative to peak broadening reduces piping response only marginally.

We calculate the seismic response of the three piping systems by two methods: Response spectrum analysis and multi-support time history analysis. We used the proposed modifications in the response spectrum analysis. The results of the response spectrum analysis were calibrated against those of time history analysis. We found that conservatism remains under the proposed modifications.

One of the three piping systems was used to show the potential benefit of the proposed modifications. We found that both snubbers and 7 of the 10 horizontal restraints could be removed without causing stresses in the piping system to exceed code allowables. Hence, the potential benefit of the proposals is very promising.

NUREG/CR-3529: REVIEW OF THE ARKANSAS NUCLEAR ONE GENERATING STATION UNIT NO. 1 EMERGENCY FEEDWATER SYSTEM RELIABILITY ANALYSIS. YOUNGBLOOD, R. W.; PAPAZOGLOU, I. A. Brookhaven National Laboratory. February 1984. 102pp. 8403230133. BNL-NUREG-51721. 22739:130.

The purposes of this report are: (1) to review the Emergency Feedwater System Upgrade Reliability Analysis for the Arkansas Nuclear One Nuclear Generating Station Unit No. 1, and (2) to estimate the probability that the Emergency Feedwater System will not perform its mission for each of three different initiators: (1) loss of main feedwater with offsite power available, (2) loss of offsite power, (3) loss of all 4160 VAC power. The scope, methodology, and failure data are prescribed by NUREG-0611, Appendix III.

NUREG/CR-3530: REVIEW OF THE DAVIS-BESSE UNIT NO. 1 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS. YOUNGBLOOD, R. W.; PAPAZOGLOU, I. A. Brookhaven National Laboratory. February 1984. 17pp. 8402170430.

BNL-NUREG-51722. 22318:319.

The purpose of this report is to review the "Davis-Besse Unit No. 1 Auxiliary Feedwater System Reliability Analysis Final Report," and to provide an independent estimate of the Auxiliary Feedwater System Reliability. This report presents estimates of the probability that the Auxiliary Feedwater System will not perform its mission for each of three different initiators: (1) loss of main feedwater with offsite power available, (2) loss of offsite power, (3) loss of all 4160 VAC power. The scope, methodology, and failure data are prescribed by NUREG-0611, Appendix III.

NUREG/CR-3531: REVIEW OF SEABROOK UNITS 1 AND 2 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS. FRESCO, A. ; YOUNGBLOOD, R. W. ; PAPAZOGLOU, I. A. Brookhaven National Laboratory. February 1984. 194pp. 8402170503. BNL-NUREG-51723. 22304:320.

This report presents the results of a review of the Emergency Feedwater System Reliability Analysis for Seabrook Nuclear Station Units 1 and 2. The objective of this report is to estimate the probability that the Emergency Feedwater System will fail to perform its mission for each of three different initiators: (1) loss of main feedwater with offsite power available, (2) loss of offsite power, (3) loss of all AC power except vital instrumentation and control 125 VDC/120 VAC power. The scope, methodology, and failure data are prescribed by NUREG-0611, Appendix III. The results are compared with those obtained in NUREG-0611 for other Westinghouse plants.

NUREG/CR-3532: RESPONSE OF RUBBER INSULATION MATERIALS TO MONOENERGETIC ELECTRON IRRADIATIONS. BUCKALEW, W. H. ; WYANT, F. J. ; LOCKWOOD, G. J. Sandia Laboratories. January 1984. 60pp. 8401130105. SAND83-2098. 21821:040.

The papers published in this report were presented at the Eleventh Water Reactor Safety Research Information Meeting held at the National Bureau of Standards, Gaithersburg, Maryland, October 24-28, 1983. The papers describe the results and program plans in nuclear reactor safety research conducted in this country and abroad. International participation in the exchange of nuclear safety research information is consistently encouraged by the Nuclear Regulatory Commission and was exemplified at this meeting by the relatively large number of papers (23) given by representatives of seven different European countries, Japan and Taiwan.

NUREG/CR-3536: SIMULATION OF LOADING CONDITIONS FOR A TYPE A PACKAGE CONTAINING AMERICIUM-241 INVOLVED IN AN AIRPLANE CRASH AT DETROIT METRO AIRPORT IN JANUARY 1983. MAXFIELD, B. W. ; WOO, H. H. Lawrence Livermore Laboratory. January 1984. 19pp. 8402060452. UCRL-53492. 22107:167.

On January 11, 1983, a United Airlines DC-8F cargo aircraft crashed shortly after takeoff from Detroit Metro Airport. A lower rear cargo pit had a type A package containing 10,000 Americium-241 (241(Am) solid-form sources, each of 1.5-microcurie (mCi) strength, used in smoke detectors. Although burned and somewhat battered, the 1-gal metal can holding all these sources was recovered completely intact with no release of radioactive material to the environment or loss of any sources. This report describes Lawrence Livermore National Laboratory's attempt to reconstruct, as closely as practical, the mechanical and thermal environments experienced by this can during and immediately after the accident. Mechanical loading of the metal can in shipping carton was simulated by impacts from a 16-lb pendulum mass falling through vertical displacements to demolish internal plastic jars and to produce major deformation of the metal can. The thermal environment was best reproduced by the simple burning of the outer shipping carton.

NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983. MURPHY, G. A. CASADA, M. L. HOY, H. C. Oak Ridge National Laboratory. January 1984. 44pp. 8402060478. ORNL/NSIC-216. 22110:230.

The results of a study utilizing the Oak Ridge National Laboratory (ORNL) Nuclear Operations Analysis Center (NOAC) computer files of operating experience reports [licensee event reports (LERs), abnormal occurrences, etc.] are summarized. In this study, specific time-related degradation mechanisms are identified as possible causes of a reportable occurrence. Data collected on domestic commercial nuclear power plants covering 1969 to 1982 yielded over 5800 events attributable to age-related failures. Of these events, 2795 were attributable to instrument drift, which are addressed separately in the report. The remaining events (3098) were reviewed, and data were collected for each event, identifying the specific system, component, and subpart; the information included age-related failure mechanism, severity of failure, and method of detection of the failure. About two-thirds of the failures were judged to be degraded, with one-third listed as catastrophic failures. No events were found to be incipient failures because an LER is prepared only on degraded or catastrophic failure conditions that place plant operation outside the Technical Specifications. The study found that information desired for evaluation of aging effects (equipment, age, service life, and environment) was seldom available from LERs. This reflects the intent of the LER system as a regulatory instrument, rather than an engineering data collection system. The study is a part of the overall Nuclear Regulatory Commission research on nuclear power plant aging effects.

NUREG/CR-3547: A SETS USER'S MANUAL FOR ACCIDENT SEQUENCE ANALYSIS. STACK, D. W. Sandia Laboratories. January 1984. 165pp. 8404020272. SAND83-2238. 22875:109.

This manual describes the use of the Set Equation Transformation System (SETS) to perform the accident sequence analysis portion of a probabilistic risk assessment (PRA) for a nuclear power plant. Other tasks in a PRA provide the input to the accident sequence analysis task. The SETS computer program is used to process these inputs to identify the dominant failure modes and to compute an approximate frequency of occurrence for an accident sequence. The use of SETS for each step in an accident sequence analysis is described and an example SETS user program is provided for each step.

NUREG/CR-3549: EVALUATION OF CONTAINMENT LEAK RATE TESTING CRITERIA. DOUGAN, J. R. Oak Ridge National Laboratory. March 1984. 56pp. 8403300318. ORNL/TM-8909. 22826:303.

Revision of Appendix J, to reflect technological advances and testing experience, has been under consideration for years and has culminated in the issuance of a draft version of a proposed revision to Appendix J. To assist in the revision process, a review of 49 Type A test reports and 46 Type B and C test reports was accomplished. Exemption requests found in 25 reports and 100 License Event Reports were also reviewed. Two major findings of the data analysis were that Type A test duration of less than 24 hours are practical and that almost all Type A test failures and delays were caused by excessive leakage through Type B and C tested components. Excessive valve leakage represented 38% of the LERs and highlighted the need for improved maintenance, repair and testing of these components. Excessive airlock leakage was generally the result of worn, damaged, misaligned, or dirty door seals. The proposed revision to Appendix J appears to be very responsive to the results of test experience and technological changes. The introduction of a regulatory guide provides a vehicle for the NRC to specify any exceptions to the relevant industry standards and to resolve areas of conflict.

NUREG/CR-3550: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Annual Summary Report - Fiscal Year 1983. MILLER, R. L.; BAUMANN, B. L. United Nuclear Corp. January 1984. 173pp. 8402170304. 22304:029.

This document summarizes work performed during the 1983 fiscal year for the Nuclear Regulatory Commission's Evaluation of Nuclear Facility Decommissioning Projects program. This report describes actual work performed during the reporting period and work planned for the future. Included as an appendix to this report is a draft of the Decommissioning Code Table/Indexes for BWR, PWR, Research and Test Reactors included in this study. Other appendices list current data from the TMI-2 recovery efforts and Shippingport Atomic Power Station decommissioning.

NUREG/CR-3553: AN EFFICIENT SIMULATION APPROACH FOR EVALUATING THE POTENTIAL EFFECTS OF NUCLEAR POWER PLANT SHUTDOWNS ON ELECTRICAL GENERATING SYSTEMS. VANKUIKEN, J. C. Argonne National Laboratory. January 1984. 37pp. 8402010274. ANL/EES-TM-233. 22048:061.

Production-cost and reliability studies of electrical utility systems have, in the past, been hindered by high computational costs and long lead times for preparing case studies. Computational costs have been especially high for simulating large systems or long periods and for conducting comprehensive sensitivity analyses. This report describes modeling developments that help alleviate previous constraints. A new simulation approach preserves an acceptable level of accuracy and detail from previous production-cost and reliability methods and, at the same time, significantly reduces the computational requirements. An automated data assembly package facilitates the collection and preparation of simulation inputs used to characterize utility systems. Several case studies are investigated to test and demonstrate the new procedures for reactor shutdown evaluations.

NUREG/CR-3554: RADIONUCLIDE MIGRATION IN GROUNDWATER. Annual Progress Report For 1982. ROBERTSON, D. E.; TOSTE, A. P.; ABEL, K. H.; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 82pp. 8402210013. PNL-4773. 22323:031.

Research has continued at a low-level waste disposal facility to characterize the physiochemical species of radionuclides migrating in groundwater. This facility consists of an unlined basin and connecting trench which receives effluent water containing low levels of a wide variety of fission and activation products and trace amounts of transuranic radionuclides. The effluent water percolates through the soil and a small fraction of it emerges at seepage springs located some 260 meters from the trench. The disposal basin and trench are very efficient in retaining most of the radionuclides, but trace amounts of a number of radionuclides existing in mobile chemical forms migrate in the groundwater from the trench to the springs. This facility provides the opportunity for characterizing the rates and mechanisms of radionuclide migration in groundwaters, identifying retardation processes, and validating geochemical models.

NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS. BLACKMAN, H. S. ; GERTMAN, D. I. ; GILMORE, W. E. ; et al. EG&G, Inc. January 1984. 36pp. 8401130092. EGG-2284. 21820:289.

The United States Nuclear Regulatory Commission (USNRC) is sponsoring an ongoing research program to develop methods of assessing various types of computer generated displays currently being implemented in nuclear power plant control rooms. The purpose of this report is to present a noninteractive simulation technique for the evaluation of computer generated displays. Four safety parameter display formats were evaluated in two separate experiments. Three formats were evaluated in Experiment I (STAR, BAR, METER). Two formats were evaluated in Experiment II (BAR, P-T map). All formats contained top-level safety parameters minimally necessary for the safe operation of a pressurized water reactor at the Loss-of-Fluid Test (LOFT) reactor. Subjects for the experiments were current or former operators at the Loss-of-Fluid Test (LOFT) reactor. The results of this experiment have indicated that the noninteractive technique can be used to evaluate the detection and recognition of transients in safety parameter display evaluation. In addition, the data suggest that, given a reliable set of parameters and good human engineering, that graphical format of the display has negligible impact of performance. The implications of these results are discussed in terms of future work and display design.

NUREG/CR-3560: EVALUATION METHODS FOR THE CONSEQUENCES OF BELOW WATER TABLE MINE DISPOSAL OF URANIUM MILL TAILINGS. MCKEON, T. J. ; NELSON, R. W. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 90pp. 8403230173. PNL-4904. 22742:217.

A method has been developed at the Pacific Northwest Laboratory to evaluate the environment consequences of below water table disposal of uranium mill tailings in mine stopes. The method described uses analytical expressions for the velocity potential and examines the convection transport of tailings liquor and leachate through the aquifer and into a water supply well located down gradient from the mine stope. The arrival distribution of contaminant (mass flux versus time) and the concentration pumped from the well as a function of time are the final results of the analysis.

NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES. BICKFORD, R. L. ; CLARK, R. A. ; DOCTOR, P. G. ; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 130pp. 8402270213. PNL-4695. 22395:263.

This report provides the results of an eddy current round robin test conducted on Inconel 600 steam generator tubing specimens with laboratory induced IGSCC. This test was an attempt to establish the best available nondestructive testing method for characterizing IGSCC in Inconel steam generator tubing. The participants were permitted to use any available eddy current method and were not limited to probes or methods that are or could be used in commercial primary side in-service inspection. Areas covered in this report include production of the specimens, defect characterizations by the participating teams, data from the subsequent destructive metallographic analysis of the specimens and a statistical evaluation of the results per team and between teams.

NUREG/CR-3562: STEAM GENERATOR TUBE INTEGRITY PROGRAM LEAK RATE TESTS-PROGRESS REPORT. CLARK, R. A. ; BICKFORD, R. L. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 68pp. 8402010373. PNL-4629. 22061:090.

This interim report presents preliminary results on leak rate tests performed on through-wall defected Inconel 600 steam generator tubing. Tube defects included an EDM (electro-discharge machine) notch and IGSCC (intergranular stress corrosion cracks) of various lengths. Tests were conducted at PWR operating temperatures with leakage of hot water/steam into air. A number of IGSCC cracks were unstable under the experiment conditions of these initial tests, continuing to grow until system capacity limitations resulted in decreased pressure differential. However, initial testing also pointed to a need for reconfiguration of the test apparatus to sustain increased flow and, more importantly, alter the mode of control. The initial test configuration is based on flow control, with pressure differential across the specimen an independent variable. This often results in pressure increases too rapid to establish the initiation of crack instability. A reconfigured system based on pressure control with flow as an independent parameter is being recommended for future tests.

NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST. BIAN, S. H. ; THURGOOD, M. J. ; KELLY, J. M. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 63pp. 8402060343. PNL-4908. 22107:202.

The computer code COBRA/TRAC was used to simulate a Small-Break Loss-of-Coolant Accident (SBLOCA) test performed at the Semiscale MOD-2A Test Facility operated by the Idaho National Engineering Laboratory. The results of the simulation were compared with the results of the actual test. The comparison showed that the COBRA/TRAC calculation gave a reasonable match with the measured data and that the code has the capability to model the loop components in an integrated coolant system for a pressurized water reactor (PWR).

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples. REECE, W. D. ; HADLEY, R. T. ; HARDTY, R. ; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 173pp. 8403190449. PNL-4923. 22680:170.

A new interactive point kernel shielding code for gamma rays named PERCS (Personnel Exposure From Right Cylindrical Surfaces) is presented with theory, a listing and examples. PERCS calculates doses from more complicated geometries faster than other known shielding codes. The code is graphics-oriented, interactive, menu-driven and easy to use. PERCS is especially suited for calculation of dose arising from activated corrosion products plated on primary piping in commercial power plants.

NUREG/CR-3577: THE MEASUREMENT OF COUNTERCURRENT PHASE SEPARATION AND DISTRIBUTION IN A TWO-DIMENSIONAL TEST SECTION. BUKHARI, M.; LAHEY, R. T. Rensselaer Polytechnic Institute, Troy, NY. January 1984. 220pp. 8401250134. 21949:028.

The degree of phase separation that occurs in the core of a pressurized water reactor (PWR) during various postulated accidents is an important consideration for studying the course of events during such accidents. The dependence of countercurrent phase separation and distribution phenomena on flow quality, mass flux and system geometry was studied experimentally in a two-dimentional (2-D) test section. A two-phase (air/water) mixture flowed upwards and single-phase water flowed downward along one side of the test section. This countercurrent flow configuration was intended to simulate the so-called "chimney effect" in the diabatic JAERI 2-D experiments in Japan.

A large air/water loop was used with a 3' x 3' x 0.5" (91.44 cm x 1.27 cm) test section to study phase separation and distribution effects. A traversing single beam gamma-densitometer was used to measure the chordal average void fractions at several elevations along the test section. Cross-plots between various low conditions and geometries were made. An error analysis giving the total error in the void fraction measurements was also performed.

High speed photographs were also made of the flow structure, to provide information on flow regimes. The photographic records and the void fraction and hydraulic inflow/outflow data are presented in a form suitable for the assessment of advanced generation computer codes (eg: TRAC).

NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics. REECE, W. D.; HOENES, G. R.; PARKHURST, M. A.; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 33pp. 8401260105. PNL-4711. 21969:288.

The gamma radiation fields in and around the retired Surry steam generator were measured extensively with thermoluminescent dosimeters (TLD's) and other standard radiation instruments. The techniques of measurement and the results are described for locations outside the shell, inside the channel head, and inside the secondary side of the steam generator. The gamma fields ranged from more than 10 R/hr in the middle of the tube bundle on the secondary side to less than 5 mR/hr at the bottom of the outside of the shell below the channel head. Co-60 was the only detected gamma emitter. The results of the measurements were used in an analytical model which predicted the Co-60 inventory to be between 70 and 87 curies.

NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis. DOCTOR, P. G.; BUCHANAN, J. A.; MCINTYRE, J. M.; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 38pp. 8402170311. PNL-3955. 22318:181.

A major task of the Steam Generator Group Project (SGGP) is to establish the reliability of the eddy current inservice inspections of PWR steam generator tubing, by comparing the eddy current data to the actual physical condition of the tubes via destructive analyses. This report describes the plans for the computer systems needed to acquire, store and analyze the diverse data to be collected during the project. The real-time acquisition of the baseline eddy current inspection data will be handled using a specially designed data acquisition computer system based on a Digital Equipment Corporation

(DEC) PDP-11/44. The data will be archived in digital form for use after the project is completed. Data base management and statistical analyses will be done on a DEC VAX-11/780. Color graphics will be heavily used to summarize the data and the results of the analyses. The report describes the data that will be taken during the project and the statistical methods that will be used to analyze the data

NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982. CLARK, R. A.; LEWIS, M. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 34pp. 8402170308. PNL-4692. 22318:223.

The Steam Group Project (SGGP) is an NRC program joined by additional sponsors. The SGGP utilizes a steam generator removed from service at a nuclear plant as a vehicle for research on a variety of safety and reliability issues. This report is a semi-annual summary of progress of the program. Information is presented on positioning the generator into the Steam Generator Examination Facility, and examination of the secondary side to confirm pretransport generator condition. The report then presents radiological field mapping results and personnel exposure monitoring data. Radiation field reduction achieved in channel head decontamination efforts is reported. The results of a profilometry examination to determine the extent of denting are summarized. Plans for unplugging of selective explosively plugged tubes are discussed.

NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982. CLARK, R. A.; LEWIS, M.; MUSCARA, J. Battelle Memorial Institute, Pacific Northwest Laboratories. February 1984. 1p. 8404200016. PNL-4693.

The Steam Generator Group Project (SGGP) is an NRC program joined by additional sponsors. The SGGP utilizes a steam generator removed from service at a nuclear plant as a vehicle for research on a variety of safety and reliability issues. This report is an annual summary of progress of the program for 1982. Information is presented on the Steam Generator Examination Facility (SGEF), especially designed and constructed for this research. Loading of the generator into the SGEF is then discussed. The report then presents radiological field mapping results and personnel exposure monitoring. This is followed by information on field reduction achieved by channel head decontaminations. The report then presents results of a secondary side examination through shell penetrations placed prior to transport, confirming no change in generator condition due to transport. Decontamination of the channel head is discussed followed by plans for eddy current testing and removal of tube plugs placed during service. Results of a preliminary profilometry examination are then provided.

NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR. ROBERTS, F. P.; BROUNS, R. J.; BYERS, K. R.; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. January 1984. 116pp. 8402240233. 22381:001.

In a study commissioned by the Nuclear Regulatory Commission, Battelle's Pacific Northwest Laboratories examined practices for calibrating and/or determining biases for the principal nuclear material measurement systems in use by the nuclear industry: uranium gravimetry, uranium determination by reduction-oxidation titrimetry, plutonium determination by amperometric titration, isotopic analysis by mass spectrometry, isotopic-dilution assay of iron and plutonium, uranium fluorometry, iron spectrophotometry, mass measurements, volume measurements, flow measurements, nondestructive assays, and holdup measurements. A number of frequently used methods are described in this report. The principle, procedures, apparatus, applications, and calibration for each are discussed. The sources of measurement bias are identified, also the expected magnitudes of errors associated with the methods.

NUREG/CR-3585: DE MINIMIS WASTE IMPACTS ANALYSIS METHODOLOGY.
OZTUNALI, O. I. Dames & Moore. ROLES, G. W. NRC - No Detailed Affiliation Given. February 1984. 531pp. 8402280006. 22415:001.

A calculational methodology is presented which can be used to estimate impacts from disposal of radioactive waste by less restrictive means ("de minimis" waste disposal). The methodology consists of two computer codes: one which determines annual radiological impacts to individuals and to populations from release of de minimis waste into less restrictive disposal pathways, and another which determines limiting concentrations of radionuclides based upon comparison with a set of individual dose limitation criteria. Operational impacts are calculated for de minimis waste transportation, treatment by incineration, and disposal. Long-term impacts after disposal (e.g., groundwater migration) are also calculated as are possible impacts from recycle of metal or glass. Alternatives for waste treatment/disposal include on-site, off-site as a municipal waste, and off-site as a hazardous waste.

NUREG/CR-3598: OCCUPATIONAL RADIOLOGICAL MONITORING AT URANIUM MILLS.
SWAJA, R. E.; SIMS, C. S. Oak Ridge National Laboratory. February 1984. 97pp. 8402280114. ORNL-6023. 22416:199.

This document provides guidance and procedures for conducting an occupational radiological monitoring program at uranium mills. Included are a review of the objectives of an occupational monitoring program and a description of normal physical and radiological environments at uranium mills. Detailed monitoring procedures are presented for airborne particulates, radon and radon daughters, external radiation, and surface contamination. Although specifically written for uranium mills, some of the procedures contained in this document may be applied to other uranium recovery facilities with similar environments.

NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS. NADEL, M. V.; KERWIN, C. M. Battelle Human Affairs Research Centers. * Battelle Memorial Institute, Pacific Northwest Laboratories. February 1984. 42pp. 8403070109. PNL-4813. 22561:172.

This report reviews the processes and criteria used by organizations other than the NRC in conducting management and organization audits and evaluations. As part of a larger project assisting the NRC in establishing improved procedures and guidelines for assessing the management and organization of applicants for nuclear power plant operating licenses, this report provides a comparative perspective on organizational assessment. The organizations whose management audits are reviewed are state public utility commissions, the Comptroller of the Currency, the Department of Health and Human Services' Office of Health Maintenance Organizations, the Food and Drug Administration, the General Accounting Office, and a large commercial insurance company. This report examines the purposes, areas of emphases, and processes used in these reviews. These organizations conclude that management is the key performance of organizational functions.

NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982. BAILEY, W. J. Battelle Memorial Institute, Pacific Northwest Laboratories. TOKAR, M. NRC - No Detailed Affiliation Given. March 1984. 99pp. 8404110312. PNL-4817. 22997:135.

This annual report, the fifth in a series, provides a brief description of fuel performance during 1982 in commercial nuclear power plants. Brief summaries of fuel design changes, fuel surveillance programs, fuel operating experience, fuel problems, high-burnup fuel experience, and items of general significance are provided. References to additional, more detailed information and related NRC evaluations are included.

NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility. DOERGE, D. H.; MILLER, R. L. United Nuclear Corp. February 1984. 54pp. 8403150214. 22649:052.

This document summarizes information concerning the decommissioning of the Plum Brook Reactor Facility, which was placed in a Nuclear Regulatory Commission (NRC) approved safe storage configuration. The data were placed in a computerized information retrieval/manipulation system which permits future utilization of this information in decommissioning of similar facilities. The information is presented both in computer output form and a manually assembled summarization.

Complete cost data were not readily available and decommissioning activities did not in all cases conform with current criteria for the SAFSTOR decommissioning mode, therefore no cost comparisons were made.

NUREG/CR-3607: RADIONUCLIDE DISTRIBUTIONS AND MIGRATION MECHANISMS AT SHALLOW LAND BURIAL SITES: 1982 Annual Report of Research Investigations On The Distribution, Migration And Containment Of Radionuclides At Maxey Flats, Kentucky. KIRBY, L. J. Battelle Memorial Institute, Pacific Northwest Laboratories. February 1984. 80pp. 8403070093. 22563:229.

Subsurface waters at Maxey Flats are anoxic, have a high alkaorganic carbon. The trench leachates are extremely variable in composition. Prominent radionuclides include (3)H, (60)Co, (90)Sr, (137)Cs, (238)(239)(240)Pu and (241)Am. A wide spectrum of dissolved organic compounds is present in the leachates, including EDTA, polar organics and decomposition products from the waste forms. Cobalt-60 and plutonium are present as EDTA complexes and (90)Sr and (137)Cs are associated with carboxylic acid type compounds. The chemistry of these waters changes drastically as they become oxic and plutonium becomes less mobile under these new conditions. Water enters the trenches by infiltration through the trench caps, though subsidence areas, and through interfaces between new landfill and the original soil. Lateral flow is very complex and slow and apparently occurs mainly by fracture flow. The plastic infiltration barrier installed in 1981-1982 has been effective in reducing soil moisture if cracks and leaks are eliminated. To date, no direct evidence of radionuclide transport to offsite locations by subsurface flow has been confirmed. The offsite distribution of radionuclides, except for tritium, is comparable to the ambient fallout from nuclear weapons testing.

Tritium concentrations in water offsite are orders of magnitude below MPC levels.

NUREG/CR-3612: PREDICTION OF FAR-FIELD SUBSURFACE RADIONUCLIDE DISPERSION COEFFICIENTS FROM HYDRAULIC CONDUCTIVITY MEASUREMENTS. A Multidimensional Stochastic Theory With Application To Fractured Rocks. WINTER, C. L. ; NEUMAN, S. P. ; NEWMAN, C. M. Arizona, Univ. of, Tucson, AZ. March 1984. 66pp. 8404050505. 22912:091.

A multidimensional stochastic theory is presented for far-field dispersion due to the spatial variability of hydraulic conductivities. We use a second-order perturbation approach to relate the far-field velocity vector, V, and dispersion tensor, D, to the mean and covariance of the local seepage velocity vector, v, and the local dispersion tensor, d. We find that, in general, V is not necessarily equal to the ensemble mean of v, micron, and that D is a second-rank symmetric tensor. In the particular case where v x velocity vector = 0 (e.g., incompressible fluid in a rigid porous medium of uniform effective porosity), V becomes equal to micron, and our expressions for D simplify to those presented by Gelhar and Axness [1983]. We further extend a conclusion of these authors, that as the Peclet number, v, increases, D becomes asymptotically linear in micron, by showing that it holds for arbitrary velocity covariance functions. Finally, we derive expressions for D as a function of v for situations where the logarithm of hydraulic conductivity fits a spherical covariance or semivariogram function, as is often the case. These expressions are applied to log hydraulic conductivity data form packer tests conducted in seven boreholes penetrating fractured granites near Oracle, southern Arizona.

NUREG/CR-3614: CONSTANT EXTENSION RATE TESTING OF SA302 GRADE B MATERIAL IN NEUTRAL AND CHLORIDE SOLUTIONS. CZAJKOWSKI, C. J. Brookhaven National Laboratory. February 1984. 48pp. 8402220099. BNL-NUREG-51736. 22364:096.

A test program was conducted on welded specimens (both stress relieved and non stress relieved) of SA302 Grade B materials. The specimens were tested in a constant extension rate apparatus in various environments in order to reproduce the transgranular cracking at Indian Point 3. The report concludes that SA302 Grade B material is susceptible to transgranular stress corrosion cracking in constant extension rate testing with as little as 1 ppm chloride (as CuC1(2) in 268 degrees C H(2)O.

NUREG/CR-3615: HYDRODYNAMICS OF TWO PHASE FLOW THROUGH HOMOGENEOUS AND STRATIFIED POROUS LAYERS. CHU, W. ; LEE, H. ; DHIR, V. K. ; et al. California, Univ. of, Los Angeles, CA. January 1984. 158pp. 8401250129. 21949:251.

An experimental investigation of two phase flow through porous layers formed of non-heated glass particles (nominal diameter 1-6 mm) has been made. Particulate bed depths of 30 cm and 70 cm were used. The effect of particle size distribution, bed porosity and bed stratification on void fraction and pressure drop through particulate beds formed in cylindrical and rectangular test sections has been investigated. The superficial velocity of liquid (water) is varied from 1.83-18.3 mm/s while the superficial velocity of gas (air) is varied from 0-68.4 mm/s. These superficial velocities were chosen so that pressure drop and void fraction measurement could be made for the porous layers in fixed and fluidized states. A model based on drift flux approach has been developed for the void fraction in homogeneous beds. Using the two phase friction pressure drop data, the relative permeabilities of the two phases have been concluded with void fraction.

The void fraction and two phase friction pressure gradient in beds composed of mixtures of spherical particles as well as shapes of different nominal sizes have also been examined. It is found that the models for single size particles are also applicable to mixtures of particles if a mean particle diameter for the mixture is defined.

The observations in stratified beds indicate depletion or build up of voids at the interface between high and low permeability regions. Blocking of the flow into one of the layers of laterally stratified beds caused the pressures at different horizontal locations at the same bed height to be different from each other.

NUREG/CR-3616: TRANSPORT AND SCREEN BLOCKAGE CHARACTERISTICS OF REFLECTIVE METALLIC INSULATION MATERIALS. BROCARD, D. N. Alden Research Laboratory. * Sandia Laboratories. January 1984. 48pp. 8402010365. ARL-124-83/M39F. 22061:040.

A loss-of-coolant-accident (LOCA) in a nuclear power plant could result in the formation of insulation debris which could transport to PWR sump screens (or BWR RHR suction intakes) and result in screen blockage. This report presents the transport and screen blockage characteristics of reflective metallic insulation materials and supplements previously acquired information on fibrous insulation materials (see NUREG/CR-2982).

These tests revealed that thin metallic foils (0.0025" and 0.004") could transport a low flow velocities, 0.2-0.5 ft/sec. Thicker foils (0.008") transported at higher velocities, 0.4-0.8 ft/sec, and "as fabricated" half cylinder insulation units required velocities in excess of 1.0 ft/sec for transport. These tests also provided information on screen blockage patterns that showed blockage could occur at the lower portion of the screen as foils readily flipped on the screen when reaching it. The tests also revealed that, although transport of foils occurred in a folding and tumbling mode, the foils did not become "water borne" and did not block the screen above their largest dimension. A maximum 80% blockage was observed in these tests.

NUREG/CR-3619: SURVEY OF COMMERCIAL NON-NUCLEAR SECURITY PROGRAMS. ISHIMOTO, W. Y. SAS of Texas, Ltd. March 1984. 49pp. 8404120389. 24035:152.

This study provides a limited, but current, review of security techniques and practices used in analogous non-nuclear commercial industries to defend against external threats. Nine non-nuclear commercial industries which engage in high-value or high-risk operations were interviewed. Current security periodicals and books were also reviewed to determine whether there are any unique security practices, techniques, or procedures in use by non-nuclear commercial industries that may benefit the security posture of the NRC and its licensees. The study briefly reviews ten specific types of threat posed by the external adversary; basic reasons for adversarial success; and detection and prevention strategies. The "average" level of security, as evidenced in practice, and the most stringent level of security used by the interviewees are also examined.

NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING. LEWIS, J. R.; MORGENSTERN, M.; RIDEOUT, T. B.; et al. Battelle Memorial Institute, Pacific Northwest Laboratories. March 1984. 129pp. 8403230200. PNL-4832. 22741:077.

The Pacific Northwest Laboratory has studied the safety aspects of monitoring the preoperational status of safety systems in nuclear power plants. The goals of the study were to assess for the NRC the effectiveness of current monitoring systems and procedures, to develop acceptance criteria by which the adequacy of safety status monitoring systems can be evaluated, to develop near-term guidelines for reducing human errors associated with monitoring safety system status, and to recommend a regulatory position on this issue. A review of safety system status monitoring practices indicated that current systems and procedures do not adequately aid control room operators in monitoring safety system status. This is true even of some systems and procedures installed to meet existing regulatory guidelines (Regulatory Guide 1.47). In consequence, this report suggests acceptance criteria for meeting the functional requirements of an adequate system for monitoring safety system status. Also suggested are near-term guidelines that could reduce the likelihood of human errors in specific, high-priority status monitoring tasks. It is our recommendation that 1) Regulatory Guide 1.47 be revised to address these acceptance criteria, and 2) the revised Regulatory Guide 1.47 be applied to all plants, including those built since the issuance of the original Regulatory Guide.

NUREG/CR-3622: A PROBABILISTIC MODEL OF ANNULAR-DISPERSED FLOW IN A REACTOR SUBCHANNEL AS SEEN BY CYLINDRICAL GEOMETRY IMPEDANCE PROBES. ALLGOOD, G. O.; ROBERTS, M. J. Oak Ridge National Laboratory. February 1984. 65pp. 8403230057. ORNL/TM-8841. 22742:300.

A probabilistic model of annular-dispersed flow in a reactor sub-channel as seen by cylindrical geometry impedance probes is developed from a finite element model of these electrodes in an inhomogeneous, isotropic medium of water and steam. The model is based on a derived finite difference equation for the potential at the center of a cube in terms of the potentials of the adjacent cubes and their material properties (Ampere's circuital law, `ow-frequency case).

The probabilistic model returns admittance (or capacitance) signals for two sets of probes based on specified film and two-phase void fractures. These signals will have temporal variations based on the flow velocities, the probe separation distance, and the frequency content of signals. The model assumes one-dimensional flow.

NUREG/CR-3625: REVIEW AND DISCUSSION OF THE DEVELOPMENT OF SYNTHETIC APERTURE FOCUSING TECHNIQUE FOR ULTRASONIC TESTING (SAFT-UT). BUSSEL, L. J.; COLLINS, H. D.; DOCTOR, S. R. Battelle Memorial Institute, Pacific Northwest Laboratories. March 1984. 112pp. 8404110296. PNL-4957. 22997:233.

The development and capabilities of synthetic aperture focusing techniques for ultrasonic testing (SAFT-UT) are presented. The purpose of SAFT-UT is to produce high-resolution images of the interior of opaque objects. The goal of this work is to develop and implement methods which can be used to detect and to quantify the extent of defects and cracks in critical components of nuclear reactors (pressure vessels, primary piping systems, and nozzles). This report places particular emphasis upon the practical experimental results that have been obtained using SAFT-UT as well as the theoretical background that underlies synthetic aperture focusing. A discussion regarding high-speed and "real-time" implementations of two- and three-dimensional synthetic aperture focusing is also presented.

NUREG/CR-3631: RESPONSE TREES AND EXPERT SYSTEMS FOR NUCLEAR REACTOR OPERATORS. NELSON, W. R. EG&G, Inc. March 1984. 26pp. 8404170031. EGG-2293. 24091:314.

The United States Nuclear Regulatory Commission is sponsoring a Project performed by EG&G Idaho, Inc., at the Idaho National Engineering Laboratory (INEL) to evaluate different display concepts for use in nuclear reactor control rooms. Included in this project is the evaluation of the response tree computer based decision aid and its associated displays. This report serves as an overview of the response tree methodology and how it has been implemented as a computer based decision aid utilizing color graphic displays. A qualitative assessment of the applicability of the response tree aid is generalized to address a larger category of computer aids, those known as knowledge based expert systems. General characteristics of expert systems are discussed, as well as examples of their application in other domains. A survey of ongoing work on expert systems in the nuclear industry is presented, and an assessment of their potential applicability is made. Finally, recommendations for the design and evaluation of computer based decision aids are presented.

NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS. WART, R. J.; SKIBA, E. L.; CURTIS, R. H.; et al. Acres American, Inc. February 1984. 191pp. 8402220358. 22364:145.

This report describes benchmark problems to test computer codes used in design of nuclear waste repositories. Problems with analytical solutions, hypothetical repository design problems, and problems simulating field experiments are used. Types of problems include: thermal conduction, geomechanical stress and coupled stress, ground water flow, and temperature problems. Specific phenomena addressed are thermal conduction, propagation, thermal expansion, and consolidation.

NUREG/CR-3642: A COBRA/TRAC, BEST-ESTIMATE ANALYSIS OF A LARGE-BREAK ACCIDENT IN A PWR EQUIPPED WITH UPPER HEAD INJECTION. GUIDOTTI, T. E.; THURGOOD, M. J. Battelle Memorial Institute, Pacific Northwest Laboratories. March 1984. 243pp. 8404100521. PNL-4971. 22977:039.

This report documents the simulation of a double-ended (200 percent), cold leg break, loss-of-coolant accident in a PWR equipped with an upper head injection system. The simulation was performed using the COBRA/TRAC thermal-hydraulic computer program developed at the Pacific Northwest Laboratories for the Nuclear Regulatory Commission to analyze PWR's with the upper head injection system. This analysis used best-estimate assumptions and a 556 cell multidimensional mesh in the vessel. Each of the four primary loops were modeled. Four cooling periods were predicted prior to the beginning of bottom reflood. The first cooling period was caused by the flashing of liquid in the lower plenum while the other three cooling periods were related to the hydrodynamic behavior in the upper head and the delivery of upper head cooling water to the core. The entire core was quenched during the first period of upper head water delivery to the core. The peak clad temperature during the transient was 1,155 degrees fahrenheit and occurred 8 sec after the initiation of blowdown. The peak temperature remained below 600 degrees fahrenheit for the remainder of the transient. The transient behavior of the reactor coolant system is presented in the form of plots of the key thermal hydraulic variables as a function of time. Major phenomena calculated during the transient (e.g., multidimensional effects, counter-current flow limiting, ECC bypass, etc.) are discussed in detail. These results are compared with a Westinghouse SATAN calculation.

NUREG/CR-3645: A GUIDE TO LITERATURE RELEVANT TO THE ORGANIZATION AND ADMINISTRATION OF NUCLEAR POWER PLANTS. SOMMERS,P. Battelle Human Affairs Research Centers. * Battelle Memorial Institute, Pacific Northwest Laboratories. February 1984. 656pp. 8403190055. PNL-4906. 22678:001.

The purpose of this report is to assist applicants for a nuclear power plant operating license through a structured review of the organization and administration literature. The Nuclear Regulatory Commission reviews an applicant's proposed organization and administration as part of the operating license review. NRC is developing draft Guidelines for a Utility Organization Plan and a proposed Workbook for Assessment of Organization and Administration for reviewing responses to the guidelines. It is the intention of the NRC to incorporate these documents when completed into Chapter 13 of the Standard Review Plan NUREG-0800. This report assists users of the Guidelines and Workbook by providing a guide to the academic literatures relevant to the concepts used in these two regulatory documents. Persons preparing responses to the Guidelines or reviewing these responses can locate literature relevant to a particular topic discussed in the Guidelines or Workbook through use of this report.

This report is organized as follows. The Introduction describes the purpose and scope of the review. Details of the search processes used to identify relevant literature are also covered. The next section documents government concern with nuclear plant organization and administration issues through a review of major reports and Congressional hearings. The third and fourth sections contain abstracts of selected items and a lengthy bibliography of the relevant items identified in our literature searches. The final section of the report is a keyword index which allows readers to identify relevant items in the abstract and bibliography sections through use of keywords. The keywords include the major concepts used in the Guidelines and Workbook to facilitate location of relevant items in the literature.

NUREG/CR-3649: DYNAMIC TESTING OF AS-BUILT CIVIL ENGINEERING STRUCTURES -A REVIEW AND EVALUATION. SRINIVASAN,M.G.; KOT,C.A.; HSIEH,B.J. Argonne National Laboratory. January 1984. 117pp. 8403070114. ANL-83-20. 22562:055.

The experience with dynamic testing of as-built large civil engineering structures other than nuclear power plant buildings is evaluated. A review of literature on the dynamic testing of a large number of structures formed the basis for this evaluation. Methods of excitation and data analysis for determining dynamic parameters from measured response are evaluated. Tests of as-built structures have enabled a partial verification of linear models, have revealed the inadequacies of some assumptions made in conventional analytical methods and have been the major source of data on damping. Tests before and after have been used to obtain a measure of the change in the integrity of a structure subjected to strong excitation. Tests on some structures at various excitation levels coupled with the development of analytical methods for determining nonlinear models from such tests is needed before testing can be used as a means of predicting response to strong excitation. However, recent improvements in experimental and analytical techniques associated with low-level testing of as-built structures enhance its utility for model verification and improvement and for the investigation of phenomena such as damping associated with soil-structure interaction.

NUREG/CR-3661: PROTOTYPICAL STEAM GENERATOR (MB-2) TRANSIENT TESTING PROGRAM. Task Plan/Scaling Analysis Report. YOUNG, M.; TAKEUCHI, K.; MENDLER, J.; et al. Westinghouse Electric Corp. March 1984. 198pp. 8403230208. EPRI NP-3494. 22743:096.

This report describes the Westinghouse MB-2 model boiler test facility and the test program currently planned (with Westinghouse/EPRI/NRC funding) to investigate various types of possible accidents which might occur in a PWR steam generator. The planned tests will simulate loss of feedwater (LOF) transients, various steam generator tube rupture (SGTR) scenarios, and steamline breaks (SLB).

The facility will be extensively modified to allow measurement of local wall and fluid temperatures, and to measure possible moisture carryover during the SLB and SGTR tests.

This report is divided into six sections. The first three sections describe the facility and the new components and instrumentation to be installed. The next section is a detailed scaling analysis of MB-2. Section 5 describes the analysis of the data which is planned.

NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL. HARRIS, D.R.; BURN, R.R.; CLARK, L.; et al. Rensselaer Polytechnic Institute, Troy, NY. February 1984. 165pp. 8403190437. 22680:001.

The impacts of a proposed rule requiring conversion of source or all NRC-Licensed training and research reactors to low enrichment uranium fuel were determined. Consideration focused on: technical feasibility, functional impacts, licensing, and schedule. It was determined that the cost of conversion would range from $1,000,000 to $12,000,000, depending on rule criteria.

NUREG/CR-3667: A GUIDE FOR REVIEWING ESTIMATES OF PRODUCTION-COST INCREASES THAT RESULT FROM NUCLEAR POWER PLANT OUTAGES. PEERENBOOM, J.P.; BUEHRING, W.A. Argonne National Laboratory. March 1984. 66pp. 8404050473. ANL/EES-TM-241. 22912:023.

Shutdowns of nuclear power plants typically result in significant increases in operating costs (production costs) for the affected utilities. This report presents a framework that will help users evaluate the reasonableness of estimated production-cost changes resulting from reactor shutdowns. The framework consists of three basic steps: (1) preliminary evaluation and classification of the outage, (2) evaluation of the input data and assumptions, and (3) evaluation of production-cost results. Several simplified procedures for estimating changes in production costs are presented.

NUREG/CR-3674: DESIGNING VEGETATION COVERS FOR LONG-TERM STABILIZATION OF URANIUM MILL TAILINGS. BEEDLOW,P.A. Battelle Memorial Institute, Pacific Northwest Laboratories. March 1984. 103pp. 8403230207. PNL-4986. 22741:207.

The use of vegetation and vegetation-rock combinations for long-term stabilization of uranium mill tailings is discussed. Interactions between surface covers and the tailings containment are identified and used as the basis for designing protective covers. The role of vegetation in erosional processes is reviewed and the effectiveness of vegetation for controlling erosion in the western U.S. is discussed. Principles of revegetation are presented. Environmental influences on vegetation are reviewed. The effects of surface covers on water dynamics within the containment system are presented. A systematic approach is given for designing protective covers using vegetation.

NUREG/CR-3698: AN AGE STRUCTURED STOCHASTIC RECRUITMENT MODEL FOR ASSESSMENT POWER PLANT IMPACT. SULLIVAN,P.J.; SWARTZMAN,G.L. Washington, Univ. of, Seattle, WA. March 1984. 29pp. 8404120390. 24034:306.

The dynamics of the Hudson River striped bass (Morone Saxatilis) stock were analyzed using a stochastic age structured model. The effect of river flow on recruitment was combined with the mortality due to fishing and power plant water uptake to obtain an overall effect of these variables on the fishery. Model equations and parameters were documented and their underlying assumptions presented. Preliminary model runs resulted in yields well below those actually observed. Calibration of model parameters brought these values closer to the observed yields, but stock values proved inexact. The influence of power plant mortality on fishery yield was evident, but the simulation results remain inconclusive.

NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT. COFFMAN,W.; VOGT,D.; MILLS,M. CorSTAR Research, Inc. March 1984. 314pp. 8404020158. 22848:012.

This is the fourth in a series of five reports that will provide critical reviews and summaries of computer programs that can be used to analyze the potential performance of a high-level radioactive waste repository. The computer programs identified in this report address the performance of a waste package, including the areas of thermal analysis, structural analysis, and special purpose programs. The report provides a summary description of 19 computer programs. Fourteen of these computer programs are being used by the U.S. Department of Energy or the U.S. Nuclear Regulatory Commission to analyze various aspects of waste package performance. The remaining five codes can be used to analyze phenomena that may be important in waste package performance.

NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program. LIN,C.C.; ECONOMAS,C.; LEHNER,J.R.; et al. Brookhaven National Laboratory. March 1984. 281pp. 8404110024. BNL-NUREG-51754. 24003:001.

CONTEMP4/MOD4 is a digital computer program that describes the response of multicompartment containment systems subjected to postulated loss-of-coolant accident (LOCA) conditions. The program is written in FORTRAN IV and can accommodate both pressurized water reactor (PWR) and boiling water reactor (BWR) containment systems.

Also, both design basis accident (DBA) and degraded core type: LOCA conditions can be analyzed. The program calculates the time variation of compartment pressures, temperatures and mass and energy inventories due to intercompartment mass and energy exchange, LOCA source terms, containment fans and pumps, cooling sprays, heat conducting structures, sump drains, PWR ice condensers, BWR pressure suppression systems hydrogen combustion within compartments and energy transfer due to gas radiation. Dynamic storage allocation (DBA) is used to limit the amount of computer core used for each problem and to provide the multicompartment capability of up to 999 individual compartments. The program employs an implicit algorithm to compute junction flow when numerically induced flow oscillations are encountered. This capability provides significant reduction of computer run time relative to previous codes in the CONTEMPT series.

NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS. WHITE, J. R.; EVERSOLE, R. E.; FARNSTROM, K. A.; et al. Remote Technology Corp. March 1984. 100pp. 8404020268. 22875:001.

This report presents and demonstrates a cost-effective approach for robotics application (CARA) to surveillance and inspection and work in existing nuclear power plants.

The CARA was developed by the Remote Technology Corporation to systematically determine the specific surveillance/inspection tasks, worker hazards, and access or equipment placement restraints in each of the many individual rooms or areas at a power plant. Solutions for each area are based upon the modular arrangement of commercially-available sensors and other robotic components.

Techniques for maximizing the cost effectiveness of robotics are emphasized in the report including: selection of low-cost robotic components, minimal installatior work in plant areas, portable systems for common use in different areas, and standardized robotic modules. Factors considered as benefits are reduced radiation exposure, man-hours, power outage, waste material, and worker safety concerns.

A partial demonstration of the CARA approach to a large BWR plant is provided in the report along with specific examples of robotic installations. Full utilization will require in-depth application at specific plants.

NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS. KELMERS, A. D.; CLARK, R. J.; CUTSHALL, N. H.; et al. Oak Ridge National Laboratory. March 1984. 59pp. 8404160218. ORNL/TM-9109. 24065:234.

This report summarizes the results of the activities of the first year in a Nuclear Regulatory Commission (NRC) supported, experimentally oriented project to evaluate geochemical information (primarily radionuclide sorption and apparent concentration limit values). The geochemical information is being developed by the Department of Energy (DOE) in their high-level waste repository site projects for use in site performance assessment calculations. During this period, work was focused on the candidate site in basalt being characterized by the Basalt Waste Isolation Project (BWIP). Activities involved measuring sorption values for technetium and neptunium under geochemical parameters expected to be relevant to the site. Oxic (air saturated), reducing (hydrazine added), and anoxic (air excluded) redox conditions were employed in batch contact tests. Geochemical modeling calculations using available thermodynamic data and codes also were carried out to evaluate site groundwaters. The results are compared with values published by BWIP as "conservative best estimate" numbers in their Site Characterization Report and to other values and information in other available BWIP reports.

Contractor Report Number Index

2

This index lists, in alphabetical order, the contractor-issued report codes for the NRC contractor reports in this compilation. Each contractor code is cross-referenced to the NUREG/CR for the report and to the 10-digit NRC Document Control System accession number.

SECONDARY REPORT NUMBER	REPORT NUMBER	SECONDARY REPORT NUMBER	REPORT NUMBER
ANL-82-25 V01	NUREG/CR-2896 V01	EPRI NP-3494	NUREG/CR-3661
ANL-82-25 V02	NUREG/CR-2896 V02	HEDL-TME 83-9	NUREG/CR-3285
ANL-82-41	NUREG/CR-2970 V04	LA-9716-MS	NUREG/CR-3224
ANL-83-11 V03	NUREG/CR-3359 V03	LA-9853-MS	NUREG/CR-3448
ANL-83-11 V04	NUREG/CR-3359 V04	LA-9910-MS V01	NUREG/CR-3522 V01
ANL-83-20	NUREG/CR-3649	LA-9910-MS V02	NUREG/CR-3522 V02
ANL-83-64	NUREG/CR-3435	LA-9929-MS	NUREG/CR-3242
ANL/EES-TM-233	NUREG/CR-3553	MLM-2983	NUREG/CR-2926
ANL/EES-TM-241	NUREG/CR-3667	ORNL-5934	NUREG/CR-3491
ANL/ES-128 R01	NUREG/CR-2869 R01	ORNL-5936	NUREG/CR-3057
ARL-124-83/M39F	NUREG/CR-3616	ORNL-5978	NUREG/CR-3389
BHARC-300/83-03	NUREG/CR-3645	ORNL-5988	NUREG/CR-3490
BHARC-400/83-01	NUREG/CR-3601	ORNL-6023	NUREG/CR-3598
BNL-NUREG-51454	NUREG/CR-2331 V03 N2	ORNL-6024	NUREG/CR-3482
BNL-NUREG-51559	NUREG/CR-2815	ORNL/CSD-90	NUREG/CR-2397
BNL-NUREG-51593	NUREG/CR-2721	ORNL/CSD/TM-197	NUREG/CR-3056
BNL-NUREG-51630	NUREG/CR-3091 V03	ORNL/NSIC-200	NUREG/CR-2000 V02N12
BNL-NUREG-51699	NUREG/CR-3444 V01	ORNL/NSIC-200	NUREG/CR-2000 V03 N1
BNL-NUREG-51712	NUREG/CR-3496	ORNL/NSIC-200	NUREG/CR-2000 V03 N2
BNL-NUREG-51721	NUREG/CR-3529	ORNL/NSIC-216	NUREG/CR-3543
BNL-NUREG-51722	NUREG/CR-3530	ORNL/SUB-7576/3	NUREG/CR-3508
BNL-NUREG-51723	NUREG/CR-3531	ORNL/SUB/81-908	NUREG/CR-3525
BNL-NUREG-51736	NUREG/CR-3614	ORNL/TM-8401	NUREG/CR-3172
BNL-NUREG-51754	NUREG/CR-3716	ORNL/TM-8413	NUREG/CR-2810
EGG-2200	NUREG/CR-2335	ORNL/TM-8418/V1	NUREG/CR-2824 V01
EGG-2272	NUREG/CR-3461	ORNL/TM-8653	NUREG/CR-3153
EGG-2284	NUREG/CR-3556	ORNL/TM-8683	NUREG/CR-3181
EGG-2293	NUREG/CR-3631	ORNL/TM-8684	NUREG/CR-3501
ENICO-1125	NUREG/CR-3067	ORNL/TM-8755	NUREG/CR-3275
ENICO-1137	NUREG/CR-3512	ORNL/TM-8787/V2	NUREG/CR-3334 V02

SECONDARY REPORT NUMBER	REPORT NUMBER
ORNL/TM-8787/V3	NUREG/CR-3334 V03
ORNL/TM-8794	NUREG/CR-3502
ORNL/TM-8796/V3	NUREG/CR-3200 V03
ORNL/TM-8841	NUREG/CR-3622
ORNL/TM-8849/V2	NUREG/CR-3422 V02
ORNL/TM-8862/V1	NUREG/CR-3439 V01
ORNL/TM-8862/V2	NUREG/CR-3439 V02
ORNL/TM-8909	NUREG/CR-3549
ORNL/TM-8921/V3	NUREG/CR-3492 V03
ORNL/TM-8950	NUREG/CR-3523
ORNL/TM-9109	NUREG/CR-3730
PNL-3786	NUREG/CR-3396
PNL-3955	NUREG/CR-3579
PNL-4542	NUREG/CR-3070
PNL-4543	NUREG/CR-3071
PNL-4583	NUREG/CR-3104
PNL-4629	NUREG/CR-3562
PNL-4692	NUREG/CR-3580
PNL-4693	NUREG/CR-3581
PNL-4695	NUREG/CR-3561
PNL-4711	NUREG/CR-3578
PNL-4773	NUREG/CR-3554
PNL-4813	NUREG/CR-3601
PNL-4817	NUREG/CR-3602
PNL-4832	NUREG/CR-3621
PNL-4904	NUREG/CR-3560
PNL-4906	NUREG/CR-3645
PNL-4908	NUREG/CR-3563
PNL-4923	NUREG/CR-3573
PNL-4957	NUREG/CR-3625

SECONDARY REPORT NUMBER	REPORT NUMBER
PNL-4971	NUREG/CR-3642
PNL-4986	NUREG/CR-3674
SAND81-2027	NUREG/CR-2932 V02
SAND82-0904	NUREG/CR-2679 V03
SAND82-1179	NUREG/CR-2812
SAND82-2933	NUREG/CR-3351
SAND83-1171	NUREG/CR-3329 V03
SAND83-1482	NUREG/CR-3412
SAND83-1916	NUREG/CR-3484
SAND83-2098	NUREG/CR-3532
SAND83-2238	NUREG/CR-3547
SAND83-7095	NUREG/CR-3309
SAND83-7471	NUREG/CR-3616
UCRL-53483	NUREG/CR-3428
UCRL-53487	NUREG/CR-3477
UCRL-53488	NUREG/CR-3478
UCRL-53490	NUREG/CR-3483
UCRL-53491	NUREG/CR-3526
UCRL-53492	NUREG/CR-3536
WCAP-10475	NUREG/CR-3661
WWL/TM-1791-1	NUREG/CR-3390
Y/DS-178	NUREG/CR-3251

Personal Author Index

This index lists the personal authors of NRC staff and contractor reports in alphabetical order. Each name is followed by the NUREG number and the title of the report(s) prepared by that author. If further information is needed, refer to the main citation by the NUREG number.

3

BARLETTA, R. E.
NUREG/CR-3496: REVIEW OF A TEST PROGRAM FOR QUALIFYING THE SOLIDIFICATION OF EPICOR II RESINS WITH CEMENT.
BARRY, L. W.
NUREG-0325 R06: U. S. NUCLEAR REGULATORY COMMISSION FUNCTIONAL ORGANIZATION CHARTS.
BARTTER, W. D.
NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL.
BAUMANN, B. L.
NUREG/CR-3550: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Annual Summary Report - Fiscal Year 1983.
BEARE, A. N.
NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.
BEEDLOW, P. A.
NUREG/CR-3674: DESIGNING VEGETATION COVERS FOR LONG-TERM STABILIZATION OF URANIUM MILL TAILINGS.
BELJWAS, T. E.
NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983.
BELL, C. R.
NUREG/CR-3224: AN ASSESSMENT OF CRBR CORE DISRUPTIVE ACCIDENT ENERGETICS.
BELL, N. E.
NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.
BENDA, B. J.
NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.
BERNREUTER, D. L.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
BIAN, S. H.
NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST.
BICKFORD, R. L.
NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.
NUREG/CR-3562: STEAM GENERATOR TUBE INTEGRITY PROGRAM LEAK RATE TESTS-PROGRESS REPORT.
BIRD, S. K.
NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER.
BLACKMAN, H. S.
NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.
NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.
BLUHM, D.
NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.
BLUMENTHAL, H. S.
NUREG-1045: GUIDANCE ON THE APPLICATION OF COMPENSATORY SAFEGUARDS MEASURES FOR POWER REACTOR LICENSEES.
BOHN, M. P.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
BOVELL, C. R.
NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.
BRADLEY, E. R.

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.
BRAY, M. A.
NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.
BROCARD, D. N.
NUREG/CR-3616: TRANSPORT AND SCREEN BLOCKAGE CHARACTERISTICS OF REFLECTIVE METALLIC INSULATION MATERIALS.
BRODZINSKI, R. L.
NUREG/CR-3554: RADIONUCLIDE MIGRATION IN GROUNDWATER. Annual Progress Report For 1982.
BROUNS, R. J.
NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.
BUCHANAN, J. A.
NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis.
BUCKALEW, W. H.
NUREG/CR-3532: RESPONSE OF RUBBER INSULATION MATERIALS TO MONOENERGETIC ELECTRON IRRADIATIONS.
BUEHRING, W. A.
NUREG/CR-3667: A GUIDE FOR REVIEWING ESTIMATES OF PRODUCTION-COST INCREASES THAT RESULT FROM NUCLEAR POWER PLANT OUTAGES.
BUKHARI, M.
NUREG/CR-3577: THE MEASUREMENT OF COUNTERCURRENT PHASE SEPARATION AND DISTRIBUTION IN A TWO-DIMENSIONAL TEST SECTION.
BUMPUS, S. E.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
BURN, R. R.
NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL.
BUSLIK, A. J.
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
BUSSEL, L. J.
NUREG/CR-3625: REVIEW AND DISCUSSION OF THE DEVELOPMENT OF SYNTHETIC APERTURE FOCUSING TECHNIQUE FOR ULTRASONIC TESTING (SAFT-UT).
BYERS, K. R.
NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.
CANONICO, D. A.
NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS.
CARDWELL, R. G.
NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.
CASADA, M. L.
NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983.
CASE, F. I.
NUREG/CR-3389: VALENCE EFFECTS ON THE SORPTION OF NUCLIDES ON ROCKS AND MINERALS.
CATTON, I.
NUREG/CR-3615: HYDRODYNAMICS OF TWO PHASE FLOW THROUGH HOMOGENEOUS AND STRATIFIED POROUS LAYERS.
CERBONE, R. J.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

CHAPMAN, R. H.
NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS.
CHEN, J. C.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
CHEVERTON, R. D.
NUREG/CR-3491: OCA-II, A CODE FOR CALCULATING THE BEHAVIOR OF 2-D AND 3-D SURFACE FLAWS IN A PRESSURE VESSEL SUBJECTED TO TEMPERATURE AND PRESSURE TRANSIENTS.
CHORA, O. K.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
CHRISTENSEN, D.
NUREG/CR-3145 V02: GEOPHYSICAL INVESTIGATION OF THE WESTERN OHIO - INDIANA REGION. Annual Report, October 1982 - September 1983.
CHU, W.
NUREG/CR-3615: HYDRODYNAMICS OF TWO PHASE FLOW THROUGH HOMOGENEOUS AND STRATIFIED POROUS LAYERS.
CHUANG, T. Y.
NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.
CHUNG, H. M.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
CLARK, L.
NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL.
CLARK, R. A.
NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.
NUREG/CR-3562: STEAM GENERATOR TUBE INTEGRITY PROGRAM LEAK RATE TESTS-PROGRESS REPORT.
NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982.
NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982.
CLARK, R. J.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.
CLEVELAND, J. C.
NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983.
NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.
COFFMAN, W.
NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT.
COHEN, L.
NUREG-0837 V03 N03: NRC TLD DIRECT RADIATION MONITORING NETWORK. Progress Report, July-September 1983.
COLEMAN, P. R.
NUREG/CR-3056: POPULATION DISTRIBUTION ANALYSIS FOR NUCLEAR POWER PLANT SITING.
COLLINS, H. D.
NUREG/CR-3625: REVIEW AND DISCUSSION OF THE DEVELOPMENT OF SYNTHETIC

APERTURE FOCUSING TECHNIQUE FOR ULTRASONIC TESTING (SAFT-UT).
COOK, J. A.
NUREG/CR-3285: PRE-TEST VISUAL EXAMINATION AND CRUD CHARACTERIZATION OF LWR RODS USED IN THE LONG-TERM, LOW-TEMPERATURE WHOLE ROD TEST.
COSTELLO, F.
NUREG-0837 V03 N03: NRC TLD DIRECT RADIATION MONITORING NETWORK. Progress Report, July-September 1983.
COVER, L. C.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
COWLEY, P. J.
NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.
CRAVEN, S. M.
NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.
CROSS, K. E.
NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE VICINITY OF SUBMERGED JETS USING ORSMAC.
CROWE, D. S.
NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.
CROWLEY, J. L.
NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS.
CUNNINGHAM, M. E.
NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.
CURTIS, R. H.
NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS.
CUTSHALL, N. H.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.
CZAJKOWSKI, C. J.
NUREG/CR-3614: CONSTANT EXTENSION RATE TESTING OF SA302 GRADE B MATERIAL IN NEUTRAL AND CHLORIDE SOLUTIONS.
DALLMAN, D. J.
NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.
DAVIS, L. A.
NUREG/CR-3390: DOCUMENTATION AND USER'S GUIDE: UNSAT2 - VARIABLY SATURATED FLOW MODEL. (Including 4 Example Problems).
DAVIS, M. S.
NUREG/CR-3444 V01: THE IMPACT OF LWR DECONTAMINATIONS ON SOLIDIFICATION, WASTE DISPOSAL AND ASSOCIATED OCCUPATIONAL EXPOSURE. Annual Report.
DAVIS, R. E.
NUREG/CR-3496: REVIEW OF A TEST PROGRAM FOR QUALIFYING THE SOLIDIFICATION OF EPICOR II RESINS WITH CEMENT.
DEEDS, W. E.
NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.
NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983.
DEUTSCH, W. J.
NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.
DHIR, V. K.

NUREG/CR-3615: HYDRODYNAMICS OF TWO PHASE FLOW THROUGH HOMOGENEOUS AND STRATIFIED POROUS LAYERS.

DOCTOR, P. G.

NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES

NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis.

DOCTOR, S. R.

NUREG/CR-3625: REVIEW AND DISCUSSION OF THE DEVELOPMENT OF SYNTHETIC APERTURE FOCUSING TECHNIQUE FOR ULTRASONIC TESTING (SAFT-UT).

DODD, C. V.

NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.

NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983.

DODSON, M. E.

NUREG/CR-3449: LABORATORY EVALUATION OF LIMESTONE AND LIME NEUTRALIZATION OF ACIDIC URANIUM MILL TAILINGS SOLUTION. Progress Report.

DOERGE, D. H.

NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility.

DOMANUS, H. M.

NUREG/CR-2896 V01: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume I: User's Manual.

NUREG/CR-2896 V02: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume II: Assessment And Verification.

NUREG/CR-3435: A NEW IMPLICIT NUMERICAL SOLUTION SCHEME IN THE COMMIX-1A COMPUTER PROGRAM.

DORRIS, R. E.

NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.

DOUGAN, J. R.

NUREG/CR-3549: EVALUATION OF CONTAINMENT LEAK RATE TESTING CRITERIA.

DRAKE, J. B.

NUREG/CR-3491: OCA-II, A CODE FOR CALCULATING THE BEHAVIOR OF 2-D AND 3-D SURFACE FLAWS IN A PRESSURE VESSEL SUBJECTED TO TEMPERATURE AND PRESSURE TRANSIENTS.

DURFEE, R. C.

NUREG/CR-3056: POPULATION DISTRIBUTION ANALYSIS FOR NUCLEAR POWER PLANT SITING.

ECONOMAS, C.

NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program.

EDMONDS, D. P.

NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS.

EINSIGER, R. E.

NUREG/CR-3285: PRE-TEST VISUAL EXAMINATION AND CRUD CHARACTERIZATION OF LWR RODS USED IN THE LONG-TERM, LOW-TEMPERATURE WHOLE ROD TEST.

EL-BASSIONI, A.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

ERASLAN, A.

NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.

ERCANBRACK, S. S.
NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis.
EVANS, D. D.
NUREG-1046 DRFT: DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN THE UNSATURATED ZONE: TECHNICAL CONSIDERATIONS. Draft Report For Comment.
EVERSOLE, R. E.
NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.
FAGER, J. E.
NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.
FANOUS, F.
NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.
FARNSTROM, K. A.
NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.
FEDERMAN, P. J.
NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL.
FENTON, D. L.
NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.
FISHCHOFF, B.
NUREG/CR-3508: STANDARD SETTING STANDARDS: A SYSTEMATIC APPROACH TO MANAGING PUBLIC HEALTH AND SAFETY RISKS.
FORD, R. E.
NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.
FOWLER, R. D.
NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.
FRAGOLA, J.
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
FRESCO, A.
NUREG/CR-3531: REVIEW OF SEABROOK UNITS 1 AND 2 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
FURGAL, D. T.
NUREG/CR-2932 V02: EQUIPMENT QUALIFICATION RESEARCH TEST OF ELECTRIC CABLE WITH FACTORY SPLICES AND INSULATION REWORK TEST NO. 2, REPORT NO. 2.
GERTMAN, D. I.
NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.
GILMORE, W. E.
NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.
GINSBERG, T.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.
GLASS, J.
NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.
GOODWIN, G. M.
NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS.
GREENE, G. A.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE

OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

GREGORY, W. S.

NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.

GREIMANN, L.

NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS

GUIDOTTI, T. E.

NUREG/CR-3642: A COBRA/TRAC, BEST-ESTIMATE ANALYSIS OF A LARGE-BREAK ACCIDENT IN A PWR EQUIPPED WITH UPPER HEAD INJECTION.

GUPPY, J. G.

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

HADLEY, R. T.

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

HALL, R. E.

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

HARDTY, R.

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

HARRINGTON, R. M.

NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983.

NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.

HARRIS, D. R.

NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL.

HARRISON, F. L.

NUREG/CR-3477: CONCENTRATIONS OF COPPER-BINDING PROTEINS IN LIVERS OF BLUEGILLS EXPOSED TO INCREASED CONCENTRATIONS OF SOLUBLE COPPER.

NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS.

HARVEY, H. W.

NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.

HEBBLE, T. L.

NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS.

HEBDON, F. J.

NUREG-1022 S01: LICENSEE EVENT REPORT SYSTEM. Description Of System And Guidelines For Reporting.

HENSLEY, W. T.

NUREG/CR-3523: A RANKING SCHEME FOR MAKING DECISIONS ON THE RELATIVE TRAINING IMPORTANCE OF POTENTIAL NUCLEAR POWER PLANT MALFUNCTIONS.

HERMANN, O. W.

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.

HILL, L. J.

KELMERS, A. D.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.
KERWIN, C. M.
NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.
KESSLER, J. H.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.
KETELAAR, D.
NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.
KIRBY, L. J.
NUREG/CR-3607: RADIONUCLIDE DISTRIBUTIONS AND MIGRATION MECHANISMS AT SHALLOW LAND BURIAL SITES: 1982 Annual Report of Research Investigations On The Distribution, Migration And Containment Of Radionuclides At Maxey Flats, Kentucky.
KJARMA, H. E.
NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCTED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.
KOT, C. A.
NUREG/CR-3649: DYNAMIC TESTING OF AS-BUILT CIVIL ENGINEERING STRUCTURES -A REVIEW AND EVALUATION.
KOZINSKY, E. J.
NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.
KUPPERMAN, D. S.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
LAHEY, R. T.
NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS.
NUREG/CR-3577: THE MEASUREMENT OF COUNTERCURRENT PHASE SEPARATION AND DISTRIBUTION IN A TWO-DIMENSIONAL TEST SECTION.
LAM, J. R.
NUREG/CR-3477: CONCENTRATIONS OF COPPER-BINDING PROTEINS IN LIVERS OF BLUEGILLS EXPOSED TO INCREASED CONCENTRATIONS OF SOLUBLE COPPER.
LANNING, D. D.
NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.
NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.
LAPPA, D. A.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
LEE, H.
NUREG/CR-3615: HYDRODYNAMICS OF TWO PHASE FLOW THROUGH HOMOGENEOUS AND STRATIFIED POROUS LAYERS.
LEHNER, J. R.
NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program.
LEWIS, J. R.
NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.
LEWIS, M.
NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982.
NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982.
LIKES, R. N.
NUREG/CR-3522 V01: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIALS, VOL 1: U Oxide Plus Graphite Powder.

NUREG/CR-3522 V02: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIAL. Volume 2: Thin Metal Foils Of Highly Enriched Uranium.

LIN, C. C.
NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program.

LIN, T.
NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.

LIN, W.
NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.

LINDEMER, T. B.
NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983.
NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.

LOCKWOOD, G. J.
NUREG/CR-3532: RESPONSE OF RUBBER INSULATION MATERIALS TO MONOENERGETIC ELECTRON IRRADIATIONS.

LOFGREN, E.
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

LONGEST, A. W.
NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS.

LOOMIS, G. G.
NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS.

LOPRESTI, C. A.
NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCTED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.

LORENZ, R. A.
NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.

LOYOLA, V. M.
NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE, PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION.

LU, S. C.
NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.

LUCKAS, W. J.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

LUDWICK, J. D.
NUREG/CR-2210: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS.

MAISE, G.
NUREG/CR-3716: CONTEMPT4/MOD4 A Multicomponent Containment System Analysis Program.

MANAKTOLA, H. K.
NUREG/CR-2721: SCOPING STUDY OF THE ALTERNATIVES FOR MANAGING WASTE CONTAINING CHELATING DECONTAMINATION CHEMICALS.

MARSHALL, R. S.
NUREG/CR-3448: URANIUM HOLDUP MODELING.

MARTIN, H. L.
NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR

POWER PLANTS.
MARTIN, R. A.
NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.
MASNIK, M. T.
NUREG-0698 R02: NRC PLAN FOR CLEANUP OPERATIONS AT THREE MILE ISLAND UNIT 2.
MAST, P. K.
NUREG/CR-3484: TRAN B-1:EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.
MAXFIELD, B. W.
NUREG/CR-3536: SIMULATION OF LOADING CONDITIONS FOR A TYPE A PACKAGE CONTAINING AMERICIUM-241 INVOLVED IN AN AIRPLANE CRASH AT DETROIT METRO AIRPORT IN JANUARY 1983.
MCARTHUR, D. A.
NUREG/CR-3484: TRAN B-1:EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.
MCBRIDE, J. A.
NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.
MCCLUNG, R. W.
NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.
NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983.
MCINTYRE, J. M.
NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis.
MCKEON, T. J.
NUREG/CR-3560: EVALUATION METHODS FOR THE CONSEQUENCES OF BELOW WATER TABLE MINE DISPOSAL OF URANIUM MILL TAILINGS.
MELBER, B. D.
NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.
MENDLER, J.
NUREG/CR-3661: PROTOTYPICAL STEAM GENERATOR (MB-2) TRANSIENT TESTING PROGRAM. Task Plan/Scaling Analysis Report.
MENSING, R. W.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
MERCER, B. W.
NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.
MEYER, R. E.
NUREG/CR-3389: VALENCE EFFECTS ON THE SORPTION OF NUCLIDES ON ROCKS AND MINERALS.
NUREG/CR-3490: THE ROLE OF GEOCHEMICAL FACTORS IN THE ASSESSMENT AND REGULATION OF GEOLOGIC DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.
MILLER, G. D.
NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.
MILLER, N. E.
NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983.

MILLER, R. L.
NUREG/CR-3550: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Annual Summary Report - Fiscal Year 1983.
NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility.
MILLS, M.
NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT.
MINOR, E. E.
NUREG/CR-2932 V02: EQUIPMENT QUALIFICATION RESEARCH TEST OF ELECTRIC CABLE WITH FACTORY SPLICES AND INSULATION REWORK TEST NO. 2, REPORT NO. 2.
MOIYA, P. S.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
MOORE, E. B.
NUREG/CR-2210: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS.
MORGENSTERN, M.
NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.
MORRIS, D. G.
NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE.
MOTES, B. G.
NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER.
NUREG/CR-3512: RAPID FIELD METHOD FOR THE CONCENTRATION OF RADIOIODINE FROM MILK.
MOUL, D. A.
NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.
MULLINS, C. B.
NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE.
MUNSON, L. F.
NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.
MURPHY, G. A.
NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983.
MUSCARA, J.
NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.
NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982.
NADEL, M. V.
NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.
NANSTAD, R. K.
NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS.
NELSON, R. W.
NUREG/CR-3560: EVALUATION METHODS FOR THE CONSEQUENCES OF BELOW WATER TABLE MINE DISPOSAL OF URANIUM MILL TAILINGS.
NELSON, W. R.
NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.
NUREG/CR-3631: RESPONSE TREES AND EXPERT SYSTEMS FOR NUCLEAR REACTOR OPERATORS.
NEUMAN, S. P.

NUREG/CR-3612: PREDICTION OF FAR-FIELD SUBSURFACE RADIONUCLIDE DISPERSION COEFFICIENTS FROM HYDRAULIC CONDUCTIVITY MEASUREMENTS. A Multidimensional Stochastic Theory With Application To Fractured Rocks.

NEUMANN, S. P.

NUREG/CR-3390: DOCUMENTATION AND USER'S GUIDE: UNSAT2 - VARIABLY SATURATED FLOW MODEL. (Including 4 Example Problems).

NEWMAN, C. M.

NUREG/CR-3612: PREDICTION OF FAR-FIELD SUBSURFACE RADIONUCLIDE DISPERSION COEFFICIENTS FROM HYDRAULIC CONDUCTIVITY MEASUREMENTS. A Multidimensional Stochastic Theory With Application To Fractured Rocks.

NG, K. K.

NUREG/CR-3716: CONTEMPT4/MOD4 A Multicomponent Containment System Analysis Program.

NICHOLS, F. A.

NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.

NICHOLSON, T. J.

NUREG-1046 DRFT: DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN THE UNSATURATED ZONE: TECHNICAL CONSIDERATIONS. Draft Report For Comment.

NORWOOD, K. S.

NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.

O'CONNELL, W. J.

NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.

O'KELLEY, G. D.

NUREG/CR-3490: THE ROLE OF GEOCHEMICAL FACTORS IN THE ASSESSMENT AND REGULATION OF GEOLOGIC DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE.

OLSON, J.

NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.

OPITZ, B. E.

NUREG/CR-3449: LABORATORY EVALUATION OF LIMESTONE AND LIME NEUTRALIZATION OF ACIDIC URANIUM MILL TAILINGS SOLUTION. Progress Report.

OSBORNE, M. F.

NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.

OSTROWSKI, N.

NUREG-1046 DRFT: DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN THE UNSATURATED ZONE. TECHNICAL CONSIDERATIONS. Draft Report For Comment.

OTT, W. R.

NUREG/CR-3057: ANALYSIS OF AVAILABILITY OF PREVIOUSLY IDENTIFIED SITES UNDER ALTERNATIVE DEMOGRAPHIC CRITERIA.

OZTUNALI, O. I.

NUREG/CR-3585: DE MINIMIS WASTE IMPACTS ANALYSIS METHODOLOGY.

PADOWSKI, M. Z.

NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS.

PAPAZOGLOU, I. A.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

NUREG/CR-3529: REVIEW OF THE ARKANSAS NUCLEAR ONE GENERATING STATION UNIT NO. 1 EMERGENCY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

NUREG/CR-3530: REVIEW OF THE DAVIS-BESSE UNIT NO. 1 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

NUREG/CR-3531: REVIEW OF SEABROOK UNITS 1 AND 2 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

PARK, J. E.
NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE VICINITY OF SUBMERGED JETS USING ORSMAC.
PARK, J. Y.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
PARKER, J. L.
NUREG/CR-3522 V01: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIALS, VOL 1: U Oxide Plus Graphite Powder.
PARKHURST, M. A.
NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.
PARKINSON, T. F.
NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL.
PARKS, C. V.
NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.
PEERENBOOM, J. P.
NUREG/CR-3667: A GUIDE FOR REVIEWING ESTIMATES OF PRODUCTION-COST INCREASES THAT RESULT FROM NUCLEAR POWER PLANT OUTAGES.
PICARD, R. R.
NUREG/CR-3448: URANIUM HOLDUP MODELING.
POLLACK, H. N.
NUREG/CR-3145 V02: GEOPHYSICAL INVESTIGATION OF THE WESTERN OHIO - INDIANA REGION. Annual Report, October 1982 - September 1983.
PREMUZIC, E. T.
NUREG/CR-2721: SCOPING STUDY OF THE ALTERNATIVES FOR MANAGING WASTE CONTAINING CHELATING DECONTAMINATION CHEMICALS.
PUGH, C. E.
NUREG/CR-3334 V02: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR APRIL-JUNE 1983.
RAINEY, J. A.
NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT.
REECE, W. D.
NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.
NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.
REESE, R. T.
NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983.
REICH, M.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.
REISENWEAVER, D.
NUREG/CP-0049: PROCEEDINGS OF THE WORKSHOP ON SPENT FUEL/CLADDING REACTION DURING DRY STORAGE.
REST, J.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
RIDEOUT, T. B.
NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.

ROBERTS, F. P.
NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.
ROBERTS, M. J.
NUREG/CR-3622: A PROBABILISTIC MODEL OF ANNULAR-DISPERSED FLOW IN A REACTOR SUBCHANNEL AS SEEN BY CYLINDRICAL GEOMETRY IMPEDANCE PROBES
ROBERTSON, D. E.
NUREG/CR-3554: RADIONUCLIDE MIGRATION IN GROUNDWATER. Annual Progress Report For 1982.
ROLES, G. W.
NUREG/CR-3585: DE MINIMIS WASTE IMPACTS ANALYSIS METHODOLOGY.
ROUNTREE, S. L.
NUREG/CR-3351: SECURITY OFFICER TACTICAL TRAINING ISSUES INVOLVING ESS EQUIPMENT.
RUGH, C. E.
NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.
RUSH, R. M.
NUREG/CR-3057: ANALYSIS OF AVAILABILITY OF PREVIOUSLY IDENTIFIED SITES UNDER ALTERNATIVE DEMOGRAPHIC CRITERIA.
RUTHER, W. E.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
RYMAN, J. C.
NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.
SAHA, P.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.
SALOMON, S. N.
NUREG-1015: STATE SURVEILLANCE OF RADIOACTIVE MATERIAL TRANSPORTATION. Final Report.
SAMANTA, P. K.
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
SASTRE, C.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.
SCHMITT, R. C.
NUREG/CR-2896 V01: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume I: User's Manual.
NUREG/CR-2896 V02: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume II: Assessment And Verification.
NUREG/CR-3435: A NEW IMPLICIT NUMERICAL SOLUTION SCHEME IN THE COMMIX-1A COMPUTER PROGRAM.
SCHREIBER, R. E.
NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.
SELBY, D. L.
NUREG/CR-3523: A RANKING SCHEME FOR MAKING DECISIONS ON THE RELATIVE TRAINING IMPORTANCE OF POTENTIAL NUCLEAR POWER PLANT MALFUNCTIONS.
SERKIZ, A. W.
NUREG-0927 R01: EVALUATION OF WATER HAMMER OCCURRENCE IN NUCLEAR POWER

PLANTS. Technical Findings Relevant To USI A-1.
NUREG-0993 R01: REGULATORY ANALYSIS FOR USI A-1, "WATER HAMMER."

SERNE, R. J.
NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.
NUREG/CR-3449: LABORATORY EVALUATION OF LIMESTONE AND LIME NEUTRALIZATION OF ACIDIC URANIUM MILL TAILINGS SOLUTION. Progress Report.

SHA, W. T.
NUREG/CR-2896 V01: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume I: User's Manual.
NUREG/CR-2896 V02: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume II: Assessment And Verification.
NUREG/CR-3435: A NEW IMPLICIT NUMERICAL SOLUTION SCHEME IN THE COMMIX-1A COMPUTER PROGRAM.

SHACK, W. J.
NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.

SHADE, J. W.
NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.

SHAH, V. L.
NUREG/CR-2896 V01: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume I: User's Manual.
NUREG/CR-2896 V02: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume II: Assessment And Verification.
NUREG/CR-3435: A NEW IMPLICIT NUMERICAL SOLUTION SCHEME IN THE COMMIX-1A COMPUTER PROGRAM.

SHARP, R. D.
NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.

SHIEH, L. C.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.

SIEGEL, A. I.
NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL.

SIMAN-TOV, I.
NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983.

SIMS, C. S.
NUREG/CR-3598: OCCUPATIONAL RADIOLOGICAL MONITORING AT URANIUM MILLS.

SKIBA, E. L.
NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS.

SMITH, B. W.
NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.

SMITH, C. M.
NUREG/CR-3439 V01: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 1.

NUREG/CR-3439 V02: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 2.

SMITH, H. A.

NUREG/CR-3522 V01: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIALS, VOL 1: U Oxide Plus Graphite Powder.

NUREG/CR-3522 V02: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIAL. Volume 2: Thin Metal Foils Of Highly Enriched Uranium.

SMITH, J. H.

NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983.

SMITH, P. R.

NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.

SNYDER, B. J.

NUREG-0698 R02: NRC PLAN FOR CLEANUP OPERATIONS AT THREE MILE ISLAND UNIT 2.

SODA, K.

NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS.

SOLBRIG, R. M.

NUREG/CR-3512: RAPID FIELD METHOD FOR THE CONCENTRATION OF RADIOIODINE FROM MILK.

SOMMERS, P.

NUREG/CR-3645: A GUIDE TO LITERATURE RELEVANT TO THE ORGANIZATION AND ADMINISTRATION OF NUCLEAR POWER PLANTS.

SOO, P.

NUREG/CR-3091 V03: REVIEW OF WASTE PACKAGE VERIFICATION TESTS. Semiannual Report Covering The Period April-September 1983.

SPENCE, R. D.

NUREG/CR-3181: QUANTITY AND NATURE OF LWR AEROSOLS PRODUCED IN THE PRESSURE VESSEL DURING CORE HEATUP ACCIDENTS - A CHEMICAL EQUILIBRIUM ESTIMATE.

SPRINKLE, J. K.

NUREG/CR-3522 V01: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIALS, VOL 1: U Oxide Plus Graphite Powder.

NUREG/CR-3522 V02: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIAL. Volume 2: Thin Metal Foils Of Highly Enriched Uranium.

SRINIVASAN, M. G.

NUREG/CR-3649: DYNAMIC TESTING OF AS-BUILT CIVIL ENGINEERING STRUCTURES -A REVIEW AND EVALUATION.

STACK, D. W.

NUREG/CR-3547: A SETS USER'S MANUAL FOR ACCIDENT SEQUENCE ANALYSIS.

STAHL, D.

NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983.

SULLIVAN, P. J.

NUREG/CR-3698: AN AGE STRUCTURED STOCHASTIC RECRUITMENT MODEL FOR ASSESSMENT POWER PLANT IMPACT.

SWAJA, R. E.

NUREG/CR-3598: OCCUPATIONAL RADIOLOGICAL MONITORING AT URANIUM MILLS.

SWARTZMAN, G. L.

NUREG/CR-3698: AN AGE STRUCTURED STOCHASTIC RECRUITMENT MODEL FOR ASSESSMENT POWER PLANT IMPACT.

SWINTH, K. L.

NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.

SZAWLEWICZ, S. A.

NUREG/CP-0048 V01: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY INFORMATION MEETING.

NUREG/CP-0048 V02: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V03: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V04: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V05: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V06: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

TAKEUCHI, K.

NUREG/CR-3661: PROTOTYPICAL STEAM GENERATOR (MB-2) TRANSIENT TESTING PROGRAM. Task Plan/Scaling Analysis Report.

TALEYARKHAN, R.

NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS.

TANNER, J. E.

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

TAYLOR, M.

NUREG-0837 V03 N03: NRC TLD DIRECT RADIATION MONITORING NETWORK. Progress Report, July-September 1983.

TEICHMANN, T.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

TEPEL, R. C.

NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT.

THEOFANOUS, T. G.

NUREG/CR-3224: AN ASSESSMENT OF CRBR CORE DISRUPTIVE ACCIDENT ENERGETICS.

THOMPSON, S. L.

NUREG/CR-3329 V03: THERMAL/HYDRAULIC ANALYSIS RESEARCH PROGRAM QUARTERLY REPORT JULY-SEPTEMBER 1983.

THOMPSON, T.

NUREG-0837 V03 N03: NRC TLD DIRECT RADIATION MONITORING NETWORK. Progress Report, July-September 1983.

THURGOOD, M. J.

NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST.

NUREG/CR-3642: A COBRA/TRAC, BEST-ESTIMATE ANALYSIS OF A LARGE-BREAK ACCIDENT IN A PWR EQUIPPED WITH UPPER HEAD INJECTION.

TKACHYK, J. W.

NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER.

TOBIAS, M. L.

NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly Progress Report For April-June 1983.

TOKAR, M.

NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982.

TOSTE, A. P.

NUREG/CR-3554: RADIONUCLIDE MIGRATION IN GROUNDWATER. Annual Progress Report For 1982.

TRAVIS, J. R.

NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.

TWEETON, D. R.

NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.

VAN DYKE, J. W.

NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT.

VAN ROOYEN, D.

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

VANKUIKEN, J. C.

NUREG/CR-3553: AN EFFICIENT SIMULATION APPROACH FOR EVALUATING THE POTENTIAL EFFECTS OF NUCLEAR POWER PLANT SHUTDOWNS ON ELECTRICAL GENERATING SYSTEMS.

VESELY, W.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

VOGT, D.

NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT.

WART, R. J.

NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS.

WEBSTER, C. C.

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.

WEBSTER, C. S.

NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.

WEEKS, J. R.

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

WELLS, J. E.

NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.

WHITE, J. R.

NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.

WHITE, W. S.

NUREG/CR-2869 R01: DIRECTORY AND PROFILE OF LICENSED URANIUM-RECOVERY FACILITIES.

WICHNER, R. P.

NUREG/CR-3181: QUANTITY AND NATURE OF LWR AEROSOLS PRODUCED IN THE PRESSURE VESSEL DURING CORE HEATUP ACCIDENTS - A CHEMICAL EQUILIBRIUM ESTIMATE.

WILSON, C. W.

NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.

WINGES, L.

NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.

WINTER, C. L.

NUREG/CR-3612: PREDICTION OF FAR-FIELD SUBSURFACE RADIONUCLIDE DISPERSION COEFFICIENTS FROM HYDRAULIC CONDUCTIVITY MEASUREMENTS. A Multidimensional Stochastic Theory With Application To Fractured Rocks.

WITTENBROCK, N.

NUREG/CR-1755: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING NUCLEAR REACTORS AT MULTIPLE-REACTOR STATIONS.

WOMELSDUFF, J. E.

NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE,PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION.

WOO, H. H.

NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA.

NUREG/CR-3536: SIMULATION OF LOADING CONDITIONS FOR A TYPE A PACKAGE CONTAINING AMERICIUM-241 INVOLVED IN AN AIRPLANE CRASH AT DETROIT METRO AIRPORT IN JANUARY 1983.

WULFF, W.

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

WYANT, F. J.

NUREG/CR-3532: RESPONSE OF RUBBER INSULATION MATERIALS TO MONOENERGETIC ELECTRON IRRADIATIONS.

YAGGEE, F. L.

NUREG/CR-2970 V04: MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.

YODER, G. L.

NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE.

YOUNG, M.

NUREG/CR-3661: PROTOTYPICAL STEAM GENERATOR (MB-2) TRANSIENT TESTING PROGRAM. Task Plan/Scaling Analysis Report.

YOUNGBLOOD, R. W.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

NUREG/CR-3529: REVIEW OF THE ARKANSAS NUCLEAR ONE GENERATING STATION UNIT NO. 1 EMERGENCY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

NUREG/CR-3530: REVIEW OF THE DAVIS-BESSE UNIT NO. 1 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

NUREG/CR-3531: REVIEW OF SEABROOK UNITS 1 AND 2 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

ZANOTELLI, W. A.

NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.

Subject Index

This index was developed from keywords and word strings in titles and abstracts. During this development period, there will be some redundancy, which will be removed later when a reasonable thesaurus has been developed through experience. Suggestions for improvements are welcome.

4

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.

Age-Related Failure
  NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983.

Aging
  NUREG/CR-2932 V02: EQUIPMENT QUALIFICATION RESEARCH TEST OF ELECTRIC CABLE WITH FACTORY SPLICES AND INSULATION REWORK TEST NO. 2, REPORT NO. 2.

Air Filter
  NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.

Air Sampler
  NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER.

Annual Report To Congress
  NUREG-1039: REVIEW AND EVALUATION OF THE NUCLEAR REGULATORY COMMISSION SAFETY RESEARCH PROGRAM FOR FISCAL YEAR 1985.

Annular Flow Channel
  NUREG/CR-3484: TRAN B-1: EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.

Annular-Dispersed Flow
  NUREG/CR-3622: A PROBABILISTIC MODEL OF ANNULAR-DISPERSED FLOW IN A REACTOR SUBCHANNEL AS SEEN BY CYLINDRICAL GEOMETRY IMPEDANCE PROBES.

4

Answers
  NUREG-0732 R01: ANSWERS TO FREQUENTLY ASKED QUESTIONS ABOUT CLEANUP ACTIVITIES AT THREE MILE ISLAND, UNIT 2.

Artificial Intelligence
  NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.

As-Built Structures
  NUREG/CR-3649: DYNAMIC TESTING OF AS-BUILT CIVIL ENGINEERING STRUCTURES -A REVIEW AND EVALUATION.

Audits
  NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.

Auxiliary Feedwater System
  NUREG/CR-3530: REVIEW OF THE DAVIS-BESSE UNIT NO. 1 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

Balance Of Plant Modeling
  NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

Basalt
  NUREG/CR-3389: VALENCE EFFECTS ON THE SORPTION OF NUCLIDES ON ROCKS AND MINERALS.
  NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.

Beta Dosimetry
  NUREG/CP-0050: PROCEEDINGS OF THE INTERNATIONAL BETA DOSIMETRY SYMPOSIUM. Held at Washington, DC February 15-18, 1983.

Biological Effects
  NUREG/CP-0050: PROCEEDINGS OF THE INTERNATIONAL BETA DOSIMETRY SYMPOSIUM. Held at Washington, DC February 15-18, 1983.

Biota
  NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS.

NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.
NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly Progress Report For April-June 1983.
NUREG/CR-3491: OCA-II, A CODE FOR CALCULATING THE BEHAVIOR OF 2-D AND 3-D SURFACE FLAWS IN A PRESSURE VESSEL SUBJECTED TO TEMPERATURE AND PRESSURE TRANSIENTS.

Cleanup
NUREG-0698 R02: NRC PLAN FOR CLEANUP OPERATIONS AT THREE MILE ISLAND UNIT 2.
NUREG-0732 R01: ANSWERS TO FREQUENTLY ASKED QUESTIONS ABOUT CLEANUP ACTIVITIES AT THREE MILE ISLAND, UNIT 2.
NUREG/CR-3496: REVIEW OF A TEST PROGRAM FOR QUALIFYING THE SOLIDIFICATION OF EPICOR II RESINS WITH CEMENT.

Code
NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.
NUREG/CR-3329 V03: THERMAL/HYDRAULIC ANALYSIS RESEARCH PROGRAM QUARTERLY REPORT JULY-SEPTEMBER 1983.
NUREG/CR-3390: DOCUMENTATION AND USER'S GUIDE: UNSAT2 - VARIABLY SATURATED FLOW MODEL. (Including 4 Example Problems).

Combustion
NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.

Comparison Studies
NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility.

Compensatory Safeguards
NUREG-1045: GUIDANCE ON THE APPLICATION OF COMPENSATORY SAFEGUARDS MEASURES FOR POWER REACTOR LICENSEES.

Computer Aid
NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.
NUREG/CR-3631: RESPONSE TREES AND EXPERT SYSTEMS FOR NUCLEAR REACTOR OPERATORS.

Computer Code
NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.
NUREG/CR-3435: A NEW IMPLICIT NUMERICAL SOLUTION SCHEME IN THE COMMIX-1A COMPUTER PROGRAM.
NUREG/CR-3491: OCA-II, A CODE FOR CALCULATING THE BEHAVIOR OF 2-D AND 3-D SURFACE FLAWS IN A PRESSURE VESSEL SUBJECTED TO TEMPERATURE AND PRESSURE TRANSIENTS.
NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST.
NUREG/CR-3585: DE MINIMIS WASTE IMPACTS ANALYSIS METHODOLOGY.
NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS.

Computer Generated Displays
NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.

Computer Maps
NUREG/CR-3056: POPULATION DISTRIBUTION ANALYSIS FOR NUCLEAR POWER PLANT SITING.

Computer Program
NUREG/CR-2624 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.
NUREG/CR-3642: A COBRA/TRAC, BEST-ESTIMATE ANALYSIS OF A LARGE-BREAK

ACCIDENT IN A PWR EQUIPPED WITH UPPER HEAD INJECTION.
NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program.
Computer
NUREG/CR-2896 V01: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume I: User's Manual.
NUREG/CR-2896 V02: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume II: Assessment And Verification.
NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE VICINITY OF SUBMERGED JETS USING ORSMAC.
NUREG/CR-3547: A SETS USER'S MANUAL FOR ACCIDENT SEQUENCE ANALYSIS.
NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility.
NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT.
Containment Integrity
NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983.
Containment Structure
NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983.
Containment System
NUREG/CR-3334 V02: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR APRIL-JUNE 1983.
NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.
NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program.
Containment Vessel
NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.
Containment
NUREG/CR-3549: EVALUATION OF CONTAINMENT LEAK RATE TESTING CRITERIA.
Contract Research
NUREG-0975 V02: COMPILATION OF CONTRACT RESEARCH FOR THE MATERIALS ENGINEERING BRANCH DIVISION OF ENGINEERING TECHNOLOGY. Annual Report For FY 1983.
Control Room
NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.
NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.
NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.
NUREG/CR-3631: RESPONSE TREES AND EXPERT SYSTEMS FOR NUCLEAR REACTOR OPERATORS.
Coolant System
NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST.
Coolant
NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS.
Cooling Region
NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE.
Cooling System
NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS.
Copper

NUREG/CR-3477: CONCENTRATIONS OF COPPER-BINDING PROTEINS IN LIVERS OF BLUEGILLS EXPOSED TO INCREASED CONCENTRATIONS OF SOLUBLE COPPER.
NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS.
Core Damage
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS.
Core Disruptive Accident
NUREG/CR-3224: AN ASSESSMENT OF CRBR CORE DISRUPTIVE ACCIDENT ENERGETICS.
Core Melt
NUREG/CR-3181: QUANTITY AND NATURE OF LWR AEROSOLS PRODUCED IN THE PRESSURE VESSEL DURING CORE HEATUP ACCIDENTS - A CHEMICAL EQUILIBRIUM ESTIMATE.
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
Core Modeling
NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS.
Core-Disruptive Accident
NUREG/CR-3484: TRAN B-1:EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.
Core
NUREG/CR-3181: QUANTITY AND NATURE OF LWR AEROSOLS PRODUCED IN THE PRESSURE VESSEL DURING CORE HEATUP ACCIDENTS - A CHEMICAL EQUILIBRIUM ESTIMATE.
Corrosion
NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE,PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION.
NUREG/CR-3091 V03: REVIEW OF WASTE PACKAGE VERIFICATION TESTS. Semiannual Report Covering The Period April-September 1983.
NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983.
Cost
NUREG/CR-2210: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS.
NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT.
NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility.
NUREG/CR-3667: A GUIDE FOR REVIEWING ESTIMATES OF PRODUCTION-COST INCREASES THAT RESULT FROM NUCLEAR POWER PLANT OUTAGES.
Countercurrent
NUREG/CR-3577: THE MEASUREMENT OF COUNTERCURRENT PHASE SEPARATION AND DISTRIBUTION IN A TWO-DIMENSIONAL TEST SECTION.
Crack
NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.
NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA.
NUREG/CR-3625: REVIEW AND DISCUSSION OF THE DEVELOPMENT OF SYNTHETIC APERTURE FOCUSING TECHNIQUE FOR ULTRASONIC TESTING (SAFT-UT).
Criteria
NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.
Crud
NUREG/CR-3285: PRE-TEST VISUAL EXAMINATION AND CRUD CHARACTERIZATION OF

UNIT NO. 1 EMERGENCY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
NUREG/CR-3531: REVIEW OF SEABROOK UNITS 1 AND 2 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.

Emergency
NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.

Enforcement Actions
NUREG-0020 V07 N12: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Grey Book)

Engagement Simulation System
NUREG/CR-3351: SECURITY OFFICER TACTICAL TRAINING ISSUES INVOLVING ESS EQUIPMENT.

Engineering Expertise
NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.

Entombment
NUREG/CR-1755: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING NUCLEAR REACTORS AT MULTIPLE-REACTOR STATIONS.

Environment
NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE VICINITY OF SUBMERGED JETS USING ORSMAC.
NUREG/CR-3598: OCCUPATIONAL RADIOLOGICAL MONITORING AT URANIUM MILLS.

Environmental Assessment
NUREG-0647: SAFETY EVALUATION AND ENVIRONMENTAL ASSESSMENT, THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2. Docket No. 50-320. (Metropolitan Edison Company, Jersey Central Power And Light Company And Pennsylvania Electric Company)

Environmental Impact Appraisal
NUREG-1049: ENVIRONMENTAL IMPACT APPRAISAL FOR RENEWAL OF SPECIAL NUCLEAR MATERIAL LICENSE NO. SNM-42. Docket No. 70-27. (Babcock & Wilcox Company, Naval Nuclear Fuel Division).

Erosion
NUREG/CR-3674: DESIGNING VEGETATION COVERS FOR LONG-TERM STABILIZATION OF URANIUM MILL TAILINGS.

Error Rates
NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.

Examination
NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.
NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982.

Excitation
NUREG/CR-3649: DYNAMIC TESTING OF AS-BUILT CIVIL ENGINEERING STRUCTURES -A REVIEW AND EVALUATION.

Exposure Reduction
NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.

Extreme Cold
NUREG-0800 07.1 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.1, Revision 1 To Appendix A.
NUREG-0800 07.5 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.5.
NUREG-0800 07.7 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.7.

FAST
NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly

PROGRESS REPORT FOR JULY-SEPTEMBER 1983.

Fracture Flow

NUREG/CR-3607: RADIONUCLIDE DISTRIBUTIONS AND MIGRATION MECHANISMS AT SHALLOW LAND BURIAL SITES: 1982 Annual Report of Research Investigations On The Distribution, Migration And Containment Of Radionuclides At Maxey Flats, Kentucky.

Fracture-Mechanics

NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.

Free-Surface Flow

NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.

Freezing

NUREG/CR-3484: TRAN B-1: EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.

Freshwater Ecosystems

NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS.

Fuel Aerosol Simulant Test

NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly Progress Report For April-June 1983.

Fuel Crust

NUREG/CR-3484: TRAN B-1: EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.

Fuel Design Changes

NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982.

Fuel Fabrication

NUREG-0430 V04 N01: LICENSED FUEL FACILITY STATUS REPORT. Inventory Difference Data. January 1983 - June 1983. (Grey Book)

Fuel Performance

NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982.

Fuel Removal

NUREG/CR-3484: TRAN B-1: EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.

Fuel

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.

NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.

G-M Detector

NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER.

Galvanized Steel

NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE, PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION.

Gamma Radiation Fields

NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.

Gamma-Ray-Based Nondestructive Assay

NUREG/CR-3522 V02: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIAL. Volume 2: Thin Metal Foils Of Highly Enriched Uranium.

Gas Pressures

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.

Gas-Cooled Reactor

ADMINISTRATION OF NUCLEAR POWER PLANTS.

HCDA

NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.

HSST

NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.

Halden Fuel Assembly

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.

Heap Leach

NUREG/CR-2869 R01: DIRECTORY AND PROFILE OF LICENSED URANIUM-RECOVERY FACILITIES.

Heat Rejection

NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS.

Heat Transfer

NUREG/CR-3329 V03: THERMAL/HYDRAULIC ANALYSIS RESEARCH PROGRAM QUARTERLY REPORT JULY-SEPTEMBER 1983.

Heated-Shroud

NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS.

Heavy-Section Steel Technology

NUREG/CR-3334 V02: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR APRIL-JUNE 1983.

NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.

High Temperature

NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.

High-Burnup Fuel

NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982

High-Level Nuclear Waste Repository

NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.

High-Level Radioactive Waste

NUREG-1046 DRFT: DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN THE UNSATURATED ZONE: TECHNICAL CONSIDERATIONS. Draft Report For Comment.

NUREG/CR-3490: THE ROLE OF GEOCHEMICAL FACTORS IN THE ASSESSMENT AND REGULATION OF GEOLOGIC DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE.

High-Level Waste

NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983.

High-Temperature Gas-Cooled Reactor

NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983

High-Temperature

NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.

NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983.

NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.

Human Engineering

NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.

Human Error Probabilities

NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.

Human Error

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.

Human Factors

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

Human Reliability

NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL.

NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.

Hydraulic Conductivity

NUREG/CR-3612: PREDICTION OF FAR-FIELD SUBSURFACE RADIONUCLIDE DISPERSION COEFFICIENTS FROM HYDRAULIC CONDUCTIVITY MEASUREMENTS. A Multidimensional Stochastic Theory With Application To Fractured Rocks.

Hydrodynamic Load

NUREG-0978 FC: MARK III LOCA-RELATED HYDRODYNAMIC LOAD DEFINITION. Generic Technical Activity B-10.

Hydrogen Generation

NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE, PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION.

IGSCC

NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.

NUREG/CR-3562: STEAM GENERATOR TUBE INTEGRITY PROGRAM LEAK RATE TESTS-PROGRESS REPORT.

Impacts

NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT.

In-Situ

NUREG/CR-2869 R01: DIRECTORY AND PROFILE OF LICENSED URANIUM-RECOVERY FACILITIES.

Independent Spent Fuel Storage

NUREG/CR-2210: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS.

Infiltration

NUREG/CR-3607: RADIONUCLIDE DISTRIBUTIONS AND MIGRATION MECHANISMS AT SHALLOW LAND BURIAL SITES: 1982 Annual Report of Research Investigations On The Distribution, Migration And Containment Of Radionuclides At Maxey Flats, Kentucky.

Inservice Inspection

NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis.

Inspection

NUREG-1015: STATE SURVEILLANCE OF RADIOACTIVE MATERIAL TRANSPORTATION. Final Report.

NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.

NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING

PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983.
NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.
NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.

Instrument Drift
NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983.

Instrumentation
NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.

Insulation Debris
NUREG/CR-3616: TRANSPORT AND SCREEN BLOCKAGE CHARACTERISTICS OF REFLECTIVE METALLIC INSULATION MATERIALS.

Insulation
NUREG/CR-3532: RESPONSE OF RUBBER INSULATION MATERIALS TO MONOENERGETIC ELECTRON IRRADIATIONS.

Intergranular Stress Corrosion
NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.

Inventory
NUREG-0430 V04 N01: LICENSED FUEL FACILITY STATUS REPORT. Inventory Difference Data. January 1983 - June 1983. (Grey Book)

Ion-Exchange
NUREG/CR-3496: REVIEW OF A TEST PROGRAM FOR QUALIFYING THE SOLIDIFICATION OF EPICOR II RESINS WITH CEMENT.

Ions
NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.
NUREG/CR-3607: RADIONUCLIDE DISTRIBUTIONS AND MIGRATION MECHANISMS AT SHALLOW LAND BURIAL SITES: 1982 Annual Report of Research Investigations On The Distribution, Migration And Containment Of Radionuclides At Maxey Flats, Kentucky.

Irradiation
NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.

Job Analysis
NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL.

Keyword Index
NUREG/CR-3645: A GUIDE TO LITERATURE RELEVANT TO THE ORGANIZATION AND ADMINISTRATION OF NUCLEAR POWER PLANTS.

LCS
NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.

LER
NUREG-1022 S01: LICENSEE EVENT REPORT SYSTEM. Description Of System And Guidelines For Reporting.
NUREG/CR-2000 V03 N2: LICENSEE EVENT REPORT (LER) COMPILATION. For Month Of February 1984.
NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983.

LEU
NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL.

LMFBR Safety Research

UNIT 2.

Occupational Radiological Monitoring

NUREG/CR-3598: OCCUPATIONAL RADIOLOGICAL MONITORING AT URANIUM MILLS.

Offsite

NUREG/CR-1755: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING NUCLEAR REACTORS AT MULTIPLE-REACTOR STATIONS.

Onsite Data Gathering

NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.

Onsite

NUREG/CR-1755: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING NUCLEAR REACTORS AT MULTIPLE-REACTOR STATIONS.

Operating Experience

NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982.

Operating Reactors

NUREG-0748 V03 N11: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of November 30, 1983. (Orange Book)

NUREG-0748 V04 N01: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of January 31, 1984. (Orange Book)

Operating Units

NUREG-0020 V07 N11: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of October 31, 1983. (Grey Book)

Operators

NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.

NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.

Organization And Administration

NUREG/CR-3645: A GUIDE TO LITERATURE RELEVANT TO THE ORGANIZATION AND ADMINISTRATION OF NUCLEAR POWER PLANTS.

Organization Chart

NUREG-0325 R03: US NUCLEAR REGULATORY COMMISSION FUNCTIONAL ORGANIZATION CHARTS.

Organizational Assessment

NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.

Outage

NUREG/CR-3667: A GUIDE FOR REVIEWING ESTIMATES OF PRODUCTION-COST INCREASES THAT RESULT FROM NUCLEAR POWER PLANT OUTAGES.

PEIS

NUREG-0698 R02: NRC PLAN FOR CLEANUP OPERATIONS AT THREE MILE ISLAND UNIT 2.

PERCS

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

PRA

NUREG-1050 DRFT: PROBABILISTIC RISK ASSESSMENT (PRA): STATUS REPORT AND GUIDANCE FOR REGULATORY APPLICATION. Draft Report For Comment.

PSDREC

NUREG/CR-3439 V01: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 1.

NUREG/CR-3439 V02: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 2.

Personnel Exposure

NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982.

NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982.

Petition

NUREG-0936 V02 N04: NRC REGULATORY AGENDA. Quarterly Report, October-December 1983.

Phase Separation

NUREG/CR-3577: THE MEASUREMENT OF COUNTERCURRENT PHASE SEPARATION AND DISTRIBUTION IN A TWO-DIMENSIONAL TEST SECTION.

Piping System

NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.

NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA.

NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.

Piping

NUREG-0020 V07 N12: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Grey Book)

Plugged Tubes

NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982.

Point Kernel

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

Polyolefin Extruded Insulation

NUREG/CR-2932 V02: EQUIPMENT QUALIFICATION RESEARCH TEST OF ELECTRIC CABLE WITH FACTORY SPLICES AND INSULATION REWORK TEST NO. 2, REPORT NO. 2.

Population

NUREG/CR-3056: POPULATION DISTRIBUTION ANALYSIS FOR NUCLEAR POWER PLANT SITING.

NUREG/CR-3057: ANALYSIS OF AVAILABILITY OF PREVIOUSLY IDENTIFIED SITES UNDER ALTERNATIVE DEMOGRAPHIC CRITERIA.

Postirradiation

NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.

Postulated Pipe Rupture

NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA.

Power Increase

NUREG-1007: SAFETY EVALUATION REPORT RELATED TO THE LICENSE RENEWAL AND POWER INCREASE FOR THE NATIONAL BUREAU OF STANDARDS REACTOR. Docket No. 50-184.

Power Plant Mortality

NUREG/CR-3698: AN AGE STRUCTURED STOCHASTIC RECRUITMENT MODEL FOR ASSESSMENT POWER PLANT IMPACT.

Power Spectral Density Recognition

NUREG/CR-3439 V01: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 1.

NUREG/CR-3439 V02: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 2.

Power

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.

Preirradiation

NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.

Reactivity Insertion
NUREG/CR-3224: AN ASSESSMENT OF CRBR CORE DISRUPTIVE ACCIDENT ENERGETICS.
Reactor Core
NUREG/CR-3359 V04: PHYSICS OF REACTOR SAFETY. Quarterly Report, October-December 1983.
Reactor Safety
NUREG/CP-0048 V01: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY INFORMATION MEETING.
NUREG/CP-0048 V02: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V03: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V04: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V05: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V06: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
NUREG/CR-3359 V03: PHYSICS OF REACTOR SAFETY. Quarterly Report, July-September 1983.
Reactor Shutdown
NUREG/CR-3553: AN EFFICIENT SIMULATION APPROACH FOR EVALUATING THE POTENTIAL EFFECTS OF NUCLEAR POWER PLANT SHUTDOWNS ON ELECTRICAL GENERATING SYSTEMS.
Reactor Subchannel
NUREG/CR-3622: A PROBABILISTIC MODEL OF ANNULAR-DISPERSED FLOW IN A REACTOR SUBCHANNEL AS SEEN BY CYLINDRICAL GEOMETRY IMPEDANCE PROBES.
Reactors Program Plan
NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility.
Recirculation Line Safe-End Cracking
NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA.
Recovery
NUREG/CR-3550: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Annual Summary Report - Fiscal Year 1983.
Regulatory Agenda
NUREG-0936 V02 N04: NRC REGULATORY AGENDA. Quarterly Report, October-December 1983.
Regulatory And Technical Reports
NUREG-0304 V08 N04: REGULATORY AND TECHNICAL REPORT. Annual Compilation For 1983.
Regulatory Guide
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.
NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.
Regulatory Licensing
NUREG-0580 V12 N12: REGULATORY LICENSING STATUS SUMMARY REPORT. Data As Of December 31, 1983. (Blue Book)
Release Tests
NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.
Release
NUREG/CR-3091 V03: REVIEW OF WASTE PACKAGE VERIFICATION TESTS. Semiannual Report Covering The Period April-September 1983.
NUREG/CR-3536: SIMULATION OF LOADING CONDITIONS FOR A TYPE A PACKAGE

DIABLO CANYON NUCLEAR POWER PLANT, Units 1 AND 2. Docket Nos. 50-275 And 50-323. (Pacific Gas and Electric Company)
NUREG-0776 S06: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2. Docket Nos. 50-387 And 50-388. (Pennsylvania Power And Light Company; Allegheny Electric Cooperative, Incorporated)
NUREG-0847: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF THE WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2. Docket Nos. 50-390 And 50-391. (Tennessee Valley Authority)
NUREG-0887 S04: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF PERRY NUCLEAR POWER PLANT, UNITS 1 AND 2. Docket Nos. 50-440 And 50-441. (Cleveland Electric Illuminating Company)
NUREG-1007: SAFETY EVALUATION REPORT RELATED TO THE LICENSE RENEWAL AND POWER INCREASE FOR THE NATIONAL BUREAU OF STANDARDS REACTOR. Docket No. 50-184.
NUREG-1043: SAFETY EVALUATION REPORT RELATED TO THE RENEWAL OF THE OPERATING LICENSE FOR THE TRAINING AND RESEARCH REACTOR AT THE UNIVERSITY OF MARYLAND. Docket No. 50-166.

Safety Evaluation
NUREG-0647: SAFETY EVALUATION AND ENVIRONMENTAL ASSESSMENT, THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2. Docket No. 50-320. (Metropolitan Edison Company, Jersey Central Power And Light Company And Pennsylvania Electric Company)

Safety Goal Policy Statement
NUREG-1050 DRFT: PROBABILISTIC RISK ASSESSMENT (PRA): STATUS REPORT AND GUIDANCE FOR REGULATORY APPLICATION. Draft Report For Comment.

Safety Goals
NUREG/CR-3508: STANDARD SETTING STANDARDS: A SYSTEMATIC APPROACH TO MANAGING PUBLIC HEALTH AND SAFETY RISKS.

Safety Research Program
NUREG-1039: REVIEW AND EVALUATION OF THE NUCLEAR REGULATORY COMMISSION SAFETY RESEARCH PROGRAM FOR FISCAL YEAR 1985.
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

Safety Research
NUREG/CP-0048 V01: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY INFORMATION MEETING.
NUREG/CP-0048 V02: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V03: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V04: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V05: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CP-0048 V06: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.
NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983.

Safety Studies
NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.

Safety System
NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.
NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.

Safety-Related Emergencies

NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.

Safety

NUREG/CR-2210: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS.

NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982.

Salinity

NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.

Screen Blockage

NUREG/CR-3616: TRANSPORT AND SCREEN BLOCKAGE CHARACTERISTICS OF REFLECTIVE METALLIC INSULATION MATERIALS.

Security Officer

NUREG/CR-3351: SECURITY OFFICER TACTICAL TRAINING ISSUES INVOLVING ESS EQUIPMENT.

Security

NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.

NUREG/CR-3619: SURVEY OF COMMERCIAL NON-NUCLEAR SECURITY PROGRAMS.

Seismic Resistance

NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.

Seismic

NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.

Seismograph Network

NUREG/CR-3145 V02: GEOPHYSICAL INVESTIGATION OF THE WESTERN OHIO - INDIANA REGION. Annual Report, October 1982 - September 1983.

Semi-Annual Summary

NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982.

Semiscale MOD-2A

NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST.

Semiscale Mod-2A

NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS.

Semiscale

NUREG/CR-3329 V03: THERMAL/HYDRAULIC ANALYSIS RESEARCH PROGRAM QUARTERLY REPORT JULY-SEPTEMBER 1983.

Set Equation Transformation System

NUREG/CR-3547: A SETS USER'S MANUAL FOR ACCIDENT SEQUENCE ANALYSIS.

Shallow Land Burial

NUREG/CR-3444 V01: THE IMPACT OF LWR DECONTAMINATIONS ON SOLIDIFICATION, WASTE DISPOSAL AND ASSOCIATED OCCUPATIONAL EXPOSURE. Annual Report.

Shell

NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.

Shielding

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

Shift Technical Advisor

NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.

Shutdown

NUREG/CR-3667: A GUIDE FOR REVIEWING ESTIMATES OF PRODUCTION-COST INCREASES THAT RESULT FROM NUCLEAR POWER PLANT OUTAGES.

Significant Enforcement Actions

NUREG-0020 V07 N12: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Grey Book)

Simulator Training
NUREG/CR-3523: A RANKING SCHEME FOR MAKING DECISIONS ON THE RELATIVE TRAINING IMPORTANCE OF POTENTIAL NUCLEAR POWER PLANT MALFUNCTIONS.

Single-Rod
NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS.

Smoke Detector
NUREG/CR-3536: SIMULATION OF LOADING CONDITIONS FOR A TYPE A PACKAGE CONTAINING AMERICIUM-241 INVOLVED IN AN AIRPLANE CRASH AT DETROIT METRO AIRPORT IN JANUARY 1983.

Sodium Uranantes
NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.

Solidification
NUREG/CR-3444 V01: THE IMPACT OF LWR DECONTAMINATIONS ON SOLIDIFICATION, WASTE DISPOSAL AND ASSOCIATED OCCUPATIONAL EXPOSURE. Annual Report.

Sorption
NUREG/CR-3389: VALENCE EFFECTS ON THE SORPTION OF NUCLIDES ON ROCKS AND MINERALS.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.

Source
NUREG/CR-3536: SIMULATION OF LOADING CONDITIONS FOR A TYPE A PACKAGE CONTAINING AMERICIUM-241 INVOLVED IN AN AIRPLANE CRASH AT DETROIT METRO AIRPORT IN JANUARY 1983.

Spent Fuel Rods
NUREG/CR-3285: PRE-TEST VISUAL EXAMINATION AND CRUD CHARACTERIZATION OF LWR RODS USED IN THE LONG-TERM, LOW-TEMPERATURE WHOLE ROD TEST.

Spent Fuel
NUREG-0020 V07 N12: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Grey Book)
NUREG-0020 V08 N01: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of December 31, 1983. (Grey Book)
NUREG/CP-0049: PROCEEDINGS OF THE WORKSHOP ON SPENT FUEL/CLADDING REACTION DURING DRY STORAGE.
NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983.

Spent Ion Exchange Media
NUREG/CR-3496: REVIEW OF A TEST PROGRAM FOR QUALIFYING THE SOLIDIFICATION OF EPICOR II RESINS WITH CEMENT.

Spent Ion-Exchange Resins
NUREG/CR-3444 V01: THE IMPACT OF LWR DECONTAMINATIONS ON SOLIDIFICATION, WASTE DISPOSAL AND ASSOCIATED OCCUPATIONAL EXPOSURE. Annual Report.

Stainless Steel Cladding
NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.

Standard Review Plan
NUREG-0800 07.1 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.1, Revision 1 To Appendix A.
NUREG-0800 07.5 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.5.
NUREG-0800 07.7 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No. 3 To Section 7.7.

Company)

Temperature

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.

NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE VICINITY OF SUBMERGED JETS USING ORSMAC.

NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.

Test Program

NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly Progress Report For April-June 1983.

Test

NUREG/CR-3091 V03: REVIEW OF WASTE PACKAGE VERIFICATION TESTS. Semiannual Report Covering The Period April-September 1983.

NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983.

NUREG/CR-3512: RAPID FIELD METHOD FOR THE CONCENTRATION OF RADIOIODINE FROM MILK.

NUREG/CR-3549: EVALUATION OF CONTAINMENT LEAK RATE TESTING CRITERIA.

NUREG/CR-3614: CONSTANT EXTENSION RATE TESTING OF SA302 GRADE B MATERIAL IN NEUTRAL AND CHLORIDE SOLUTIONS.

NUREG/CR-3649: DYNAMIC TESTING OF AS-BUILT CIVIL ENGINEERING STRUCTURES -A REVIEW AND EVALUATION.

Thermal Analysis

NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT.

Thermal Conduction

NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS.

Thermal-Hydraulic Reactor

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.

Thermal-Hydraulic

NUREG/CR-3642: A COBRA/TRAC, BEST-ESTIMATE ANALYSIS OF A LARGE-BREAK ACCIDENT IN A PWR EQUIPPED WITH UPPER HEAD INJECTION.

NUREG/CR-3359 V03: PHYSICS OF REACTOR SAFETY. Quarterly Report, July-September 1983.

NUREG/CR-3359 V04: PHYSICS OF REACTOR SAFETY. Quarterly Report, October-December 1983.

NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE.

Thermal-Shock

NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.

Thermoluminescent Dosimeter

NUREG-0837 V03 N03: NRC TLD DIRECT RADIATION MONITORING NETWORK. Progress Report, July-September 1983.

NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.

Through-Wall

NUREG/CR-3562: STEAM GENERATOR TUBE INTEGRITY PROGRAM LEAK RATE TESTS-PROGRESS REPORT.

Title List

NUREG-0540 V05 N11: TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. November 1-30, 1983.

NUREG-0540 V05 N12: TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. December 1-31, 1983.

Training Program

NUREG/CR-3523: A RANKING SCHEME FOR MAKING DECISIONS ON THE RELATIVE

NRC Originating Organization Index (Staff Reports)

This index lists those NRC organizations that have published staff reports. The index is arranged alphabetically by major NRC organizations (e.g., program offices) and then by subsections of these (e.g., divisions, branches) where appropriate. Each entry is followed by a NUREG number and title of the report(s). If further information is needed, refer to the main citation by NUREG number.

5

DIVISION OF RULES AND RECORDS
NUREG-0936 V02 N04: NRC REGULATORY AGENDA. Quarterly Report, October-December 1983.

EDO - OFFICE OF STATE PROGRAMS

OFFICE OF STATE PROGRAMS, DIRECTOR
NUREG-1015: STATE SURVEILLANCE OF RADIOACTIVE MATERIAL TRANSPORTATION. Final Report.

EDO - OFFICE FOR ANALYSIS & EVALUATION OF OPERATIONAL DATA

DIRECTOR'S OFFICE
NUREG-1022 S01: LICENSEE EVENT REPORT SYSTEM. Description Of System And Guidelines For Reporting.

OFFICE OF INSPECTION & ENFORCEMENT (POST 12/11/80)

DIRECTOR'S OFFICE, OFFICE OF INSPECTION AND ENFORCEMENT
NUREG-0430 V04 N01: LICENSED FUEL FACILITY STATUS REPORT. Inventory Difference Data. January 1983 - June 1983. (Grey Book)
NUREG-0940 V02 N04: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED. Quarterly Progress Report, October-December 1983.

OFFICE OF NUCLEAR MATERIAL SAFETY & SAFEGUARDS

DIVISION OF FUEL CYCLE & MATERIAL SAFETY
NUREG-1049: ENVIRONMENTAL IMPACT APPRAISAL FOR RENEWAL OF SPECIAL NUCLEAR MATERIAL LICENSE NO. SNM-42. Docket No. 70-27. (Babcock & Wilcox Company, Naval Nuclear Fuel Division).

DIVISION OF SAFEGUARDS
NUREG-0525 R08: SAFEGUARDS SUMMARY EVENT LIST (SSEL).
NUREG-1045: GUIDANCE ON THE APPLICATION OF COMPENSATORY SAFEGUARDS MEASURES FOR POWER REACTOR LICENSEES.

U.S. NUCLEAR REGULATORY COMMISSION

COMMISSIONERS
NUREG-0885 I03: US NUCLEAR REGULATORY COMMISSION POLICY AND PLANNING GUIDANCE 1984.

NRC - NO DETAILED AFFILIATION GIVEN
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
NUREG/CR-3057: ANALYSIS OF AVAILABILITY OF PREVIOUSLY IDENTIFIED SITES UNDER ALTERNATIVE DEMOGRAPHIC CRITERIA.
NUREG/CR-3585: DE MINIMIS WASTE IMPACTS ANALYSIS METHODOLOGY.
NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982.

OFFICE OF NUCLEAR REGULATORY RESEARCH (POST 4/05/81)

OFFICE OF NUCLEAR REGULATORY RESEARCH, DIRECTOR
NUREG/CP-0050: PROCEEDINGS OF THE INTERNATIONAL BETA DOSIMETRY SYMPOSIUM. Held at Washington, DC February 15-18, 1983.

DIVISION OF HEALTH, SITING & WASTE MANAGEMENT

NUREG-1046 DRFT: DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN THE UNSATURATED ZONE: TECHNICAL CONSIDERATIONS. Draft Report For Comment.

DIVISION OF RISK ANALYSIS & OPERATIONS (POST 840429)

NUREG-1050 DRFT: PROBABILISTIC RISK ASSESSMENT (PRA): STATUS REPORT AND GUIDANCE FOR REGULATORY APPLICATION. Draft Report For Comment.

DIVISION OF ENGINEERING TECHNOLOGY

NUREG-0975 V02: COMPILATION OF CONTRACT RESEARCH FOR THE MATERIALS ENGINEERING BRANCH DIVISION OF ENGINEERING TECHNOLOGY. Annual Report For FY 1983.

NUREG/CP-0049: PROCEEDINGS OF THE WORKSHOP ON SPENT FUEL/CLADDING REACTION DURING DRY STORAGE.

EDO-RESOURCE MANAGEMENT

OFFICE OF RESOURCE MANAGEMENT, DIRECTOR

NUREG-0325 R06: U. S. NUCLEAR REGULATORY COMMISSION FUNCTIONAL ORGANIZATION CHARTS.

NUREG-0485 V05 N11: SYSTEMATIC EVALUATION PROGRAM, STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Buff Book)

DIVISION OF BUDGET & ANALYSIS

NUREG-1040: FY 1985 BUDGET ESTIMATES.

DIVISION OF DATA AUTOMATION & MANAGEMENT INFORMATION

NUREG-0748 V03 N11: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of November 30, 1983. (Orange Book)

NUREG-0748 V03 N12: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of December 31, 1983. (Orange Book)

NUREG-0748 V04 N01: OPERATING REACTORS LICENSING ACTIONS SUMMARY. Data As Of January 31, 1984. (Orange Book)

MANAGEMENT INFORMATION BRANCH

NUREG-0020 V07 N11: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of October 31, 1983. (Grey Book)

NUREG-0020 V07 N12: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of November 30, 1983. (Grey Book)

NUREG-0020 V08 N01: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of December 31, 1983. (Grey Book)

NUREG-0020 V08 N02: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of January 31, 1984. (Grey Book)

NUREG-0580 V12 N12: REGULATORY LICENSING STATUS SUMMARY REPORT. Data As Of December 31, 1983. (Blue Book)

NUREG-0606 V06 N01: UNRESOLVED SAFETY ISSUES SUMMARY. Data As Of February 17, 1984. (Aqua Book)

OFFICE OF NUCLEAR REACTOR REGULATION (POST 4/28/80)

OFFICE OF NUCLEAR REACTOR REGULATION, DIRECTOR

NUREG-0647: SAFETY EVALUATION AND ENVIRONMENTAL ASSESSMENT, THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2. Docket No. 50-320. (Metropolitan Edison Company, Jersey Central Power And Light Company And Pennsylvania Electric Company)

NUREG-0775: FINAL ENVIRONMENTAL STATEMENT RELATED TO THE OPERATION OF COMANCHE PEAK STEAM ELECTRIC STATION, UNIT NOS. 1 AND 2. Docket Nos. 50-445 And 50-446. (Texas Utilities Generating Company)

NUREG-0800 07.1 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No.

3 To Section 7.1, Revision 1 To Appendix A.

NUREG-0800 07.5 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No 3 To Section 7.5.

NUREG-0800 07.7 R03: STANDARD REVIEW PLAN FOR THE REVIEW OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS. LWR Edition. Revision No 3 To Section 7.7.

TMI PROGRAM OFFICE

NUREG-0698 R02: NRC PLAN FOR CLEANUP OPERATIONS AT THREE MILE ISLAND UNIT 2.

NUREG-0732 R01: ANSWERS TO FREQUENTLY ASKED QUESTIONS ABOUT CLEANUP ACTIVITIES AT THREE MILE ISLAND, UNIT 2.

DIVISION OF SYSTEMS INTEGRATION (POST 811005)

NUREG-0978 FC: MARK III LOCA-RELATED HYDRODYNAMIC LOAD DEFINITION. Generic Technical Activity B-10.

DIVISION OF LICENSING

NUREG-0519 S08: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF LA SALLE COUNTY STATION, UNITS 1 AND 2. Docket Nos. 50-373 And 50-374. (Commomwealth Edison Company)

NUREG-0675 S17: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2. Docket Nos. 50-275 And 50-323. (Pacific Gas And Electric Company)

NUREG-0675 S22: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF DIABLO CANYON NUCLEAR POWER PLANT, Units 1 AND 2. Docket Nos. 50-275 And 50-323. (Pacific Gas and Electric Company)

NUREG-0776 S06: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF SUSQUEHANNA STEAM ELECTRIC STATION, UNITS 1 AND 2. Docket Nos. 50-387 And 50-388. (Pennsylvania Power And Light Company; Allegheny Electric Cooperative, Incorporated)

NUREG-0847 S02: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2. Docket Nos. 50-390 And 50-391. (Tennessee Valley Authority)

NUREG-0887 S04: SAFETY EVALUATION REPORT RELATED TO THE OPERATION OF PERRY NUCLEAR POWER PLANT, UNITS 1 AND 2. Docket Nos. 50-440 And 50-441. (Cleveland Electric Illuminating Company)

NUREG-1007 S01: SAFETY EVALUATION REPORT RELATED TO THE LICENSE RENEWAL AND POWER INCREASE FOR THE NATIONAL BUREAU OF STANDARDS REACTOR. Docket No. 50-184.

NUREG-1042: TECHNICAL SPECIFICATIONS FOR SUSQUEHANNA STEAM ELECTRIC STATION, UNIT NO. 2. Docket No. 50-388. (Pennsylvania Power And Light Company)

NUREG-1043: SAFETY EVALUATION REPORT RELATED TO THE RENEWAL OF THE OPERATING LICENSE FOR THE TRAINING AND RESEARCH REACTOR AT THE UNIVERSITY OF MARYLAND. Docket No. 50-166.

DIVISION OF SAFETY TECHNOLOGY

NUREG-0927 R01: EVALUATION OF WATER HAMMER OCCURRENCE IN NUCLEAR POWER PLANTS. Technical Findings Relevant To USI A-1.

NUREG-0993 R01: REGULATORY ANALYSIS FOR USI A-1, "WATER HAMMER."

NRC Contract Sponsor Index (Contractor Reports)

This index lists the NRC organizations that sponsored the contractor reports listed in this compilation. It is arranged alphabetically by major NRC organization (e.g., program office) and then by subsections of these (e.g., divisions) where appropriate. The sponsor organization is followed by the NUREG/CR number and title of the report(s) prepared by that organization. If further information is needed, refer to the main citation by the NUREG/CR number.

6

NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS.
NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.

OFFICE OF NUCLEAR REGULATORY RESEARCH (POST 4/05/81)

OFFICE OF NUCLEAR REGULATORY RESEARCH, DIRECTOR

NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.
NUREG/CR-2970 V04. MATERIALS SCIENCE AND TECHNOLOGY DIVISION LIGHT-WATER-REACTOR SAFETY RESEARCH PROGRAM: QUARTERLY PROGRESS REPORT OCTOBER-DECEMBER 1982.
NUREG/CR-3439 V01: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 1.
NUREG/CR-3553: AN EFFICIENT SIMULATION APPROACH FOR EVALUATING THE POTENTIAL EFFECTS OF NUCLEAR POWER PLANT SHUTDOWNS ON ELECTRICAL GENERATING SYSTEMS.

ACCIDENT SOURCE TERM PROGRAM OFFICE

NUREG/CR-3667: A GUIDE FOR REVIEWING ESTIMATES OF PRODUCTION-COST INCREASES THAT RESULT FROM NUCLEAR POWER PLANT OUTAGES.

DIVISION OF ACCIDENT EVALUATION (PRE 840101)

NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS.
NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS.
NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE, PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION.
NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.
NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.
NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.
NUREG/CR-3359 V03: PHYSICS OF REACTOR SAFETY. Quarterly Report, July-September 1983.
NUREG/CR-3435: A NEW IMPLICIT NUMERICAL SOLUTION SCHEME IN THE COMMIX-1A COMPUTER PROGRAM.
NUREG/CR-3484: TRAN B-1: EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.
NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE.
NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS.
NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST.
NUREG/CR-3577: THE MEASUREMENT OF COUNTERCURRENT PHASE SEPARATION AND DISTRIBUTION IN A TWO-DIMENSIONAL TEST SECTION.
NUREG/CR-3615: HYDRODYNAMICS OF TWO PHASE FLOW THROUGH HOMOGENEOUS AND STRATIFIED POROUS LAYERS.

DIVISION OF ACCIDENT EVALUATION

NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.
NUREG/CR-2679 V03: ADVANCED REACTOR SAFETY RESEARCH QUARTERLY

6

REPORT, JULY-SEPTEMBER 1982.

NUREG/CR-2896 V01: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume I: User's Manual.

NUREG/CR-2896 V02: COMMIX-1A: A THREE-DIMENSIONAL TRANSIENT SINGLE-PHASE COMPUTER PROGRAM FOR THERMAL HYDRAULIC ANALYSIS OF SINGLE AND MULTICOMPONENT SYSTEMS. Volume II: Assessment And Verification.

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.

NUREG/CR-3181: QUANTITY AND NATURE OF LWR AEROSOLS PRODUCED IN THE PRESSURE VESSEL DURING CORE HEATUP ACCIDENTS - A CHEMICAL EQUILIBRIUM ESTIMATE.

NUREG/CR-3329 V03: THERMAL/HYDRAULIC ANALYSIS RESEARCH PROGRAM QUARTERLY REPORT JULY-SEPTEMBER 1983.

NUREG/CR-3359 V04: PHYSICS OF REACTOR SAFETY. Quarterly Report, October-December 1983.

NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly Progress Report For April-June 1983.

NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1-JUNE 30, 1983.

NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.

NUREG/CR-3622: A PROBABILISTIC MODEL OF ANNULAR-DISPERSED FLOW IN A REACTOR SUBCHANNEL AS SEEN BY CYLINDRICAL GEOMETRY IMPEDANCE PROBES.

NUREG/CR-3642: A COBRA/TRAC, BEST-ESTIMATE ANALYSIS OF A LARGE-BREAK ACCIDENT IN A PWR EQUIPPED WITH UPPER HEAD INJECTION.

NUREG/CR-3661: PROTOTYPICAL STEAM GENERATOR (MB-2) TRANSIENT TESTING PROGRAM. Task Plan/Scaling Analysis Report.

NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL.

DIVISION OF FACILITY OPERATIONS

NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER.

NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.

NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL.

NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.

NUREG/CR-3439 V02: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 2.

NUREG/CR-3448: URANIUM HOLDUP MODELING.

NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.

NUREG/CR-3512: RAPID FIELD METHOD FOR THE CONCENTRATION OF RADIOIODINE FROM MILK.

NUREG/CR-3522 V01: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIALS, VOL 1: U Oxide Plus Graphite Powder.

NUREG/CR-3522 V02: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIAL. Volume 2: Thin Metal Foils Of Highly Enriched Uranium.

NUREG/CR-3523: A RANKING SCHEME FOR MAKING DECISIONS ON THE RELATIVE TRAINING IMPORTANCE OF POTENTIAL NUCLEAR POWER PLANT MALFUNCTIONS.

NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED

DISPLAYS.
NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.
NUREG/CR-3598: OCCUPATIONAL RADIOLOGICAL MONITORING AT URANIUM MILLS.
NUREG/CR-3631: RESPONSE TREES AND EXPERT SYSTEMS FOR NUCLEAR REACTOR OPERATORS.
NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.

DIVISION OF HEALTH, SITING & WASTE MANAGEMENT
NUREG/CR-3056: POPULATION DISTRIBUTION ANALYSIS FOR NUCLEAR POWER PLANT SITING.
NUREG/CR-3057. ANALYSIS OF AVAILABILITY OF PREVIOUSLY IDENTIFIED SITES UNDER ALTERNATIVE DEMOGRAPHIC CRITERIA.
NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.
NUREG/CR-3145 V02: GEOPHYSICAL INVESTIGATION OF THE WESTERN OHIO - INDIANA REGION. Annual Report, October 1982 - September 1983.
NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE VICINITY OF SUBMERGED JETS USING ORSMAC.
NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.
NUREG/CR-3389: VALENCE EFFECTS ON THE SORPTION OF NUCLIDES ON ROCKS AND MINERALS.
NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983.
NUREG/CR-3449: LABORATORY EVALUATION OF LIMESTONE AND LIME NEUTRALIZATION OF ACIDIC URANIUM MILL TAILINGS SOLUTION. Progress Report.
NUREG/CR-3477: CONCENTRATIONS OF COPPER-BINDING PROTEINS IN LIVERS OF BLUEGILLS EXPOSED TO INCREASED CONCENTRATIONS OF SOLUBLE COPPER.
NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS.
NUREG/CR-3490: THE ROLE OF GEOCHEMICAL FACTORS IN THE ASSESSMENT AND REGULATION OF GEOLOGIC DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE.
NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT.
NUREG/CR-3554: RADIONUCLIDE MIGRATION IN GROUNDWATER. Annual Progress Report For 1982.
NUREG/CR-3560: EVALUATION METHODS FOR THE CONSEQUENCES OF BELOW WATER TABLE MINE DISPOSAL OF URANIUM MILL TAILINGS.
NUREG/CR-3607: RADIONUCLIDE DISTRIBUTIONS AND MIGRATION MECHANISMS AT SHALLOW LAND BURIAL SITES: 1982 Annual Report of Research Investigations On The Distribution, Migration And Containment Of Radionuclides At Maxey Flats, Kentucky.
NUREG/CR-3612: PREDICTION OF FAR-FIELD SUBSURFACE RADIONUCLIDE DISPERSION COEFFICIENTS FROM HYDRAULIC CONDUCTIVITY MEASUREMENTS. A Multidimensional Stochastic Theory With Application To Fractured Rocks.
NUREG/CR-3645: A GUIDE TO LITERATURE RELEVANT TO THE ORGANIZATION AND ADMINISTRATION OF NUCLEAR POWER PLANTS.
NUREG/CR-3674: DESIGNING VEGETATION COVERS FOR LONG-TERM STABILIZATION OF URANIUM MILL TAILINGS.
NUREG/CR-3698: AN AGE STRUCTURED STOCHASTIC RECRUITMENT MODEL FOR ASSESSMENT POWER PLANT IMPACT.

DIVISION OF RISK ANALYSIS & OPERATIONS (POST 840429)
NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND

PRELIMINARY TEST RESULTS.

NUREG/CR-3508: STANDARD SETTING STANDARDS: A SYSTEMATIC APPROACH TO MANAGING PUBLIC HEALTH AND SAFETY RISKS.

NUREG/CR-3547: A SETS USER'S MANUAL FOR ACCIDENT SEQUENCE ANALYSIS.

DIVISION OF ENGINEERING TECHNOLOGY

NUREG/CR-1755: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING NUCLEAR REACTORS AT MULTIPLE-REACTOR STATIONS.

NUREG/CR-2210: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS.

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.

NUREG/CR-2932 V02: EQUIPMENT QUALIFICATION RESEARCH TEST OF ELECTRIC CABLE WITH FACTORY SPLICES AND INSULATION REWORK TEST NO. 2, REPORT NO. 2.

NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983.

NUREG/CR-3285: PRE-TEST VISUAL EXAMINATION AND CRUD CHARACTERIZATION OF LWR RODS USED IN THE LONG-TERM, LOW-TEMPERATURE WHOLE ROD TEST.

NUREG/CR-3334 V02: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR APRIL-JUNE 1983.

NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.

NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983.

NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.

NUREG/CR-3444 V01: THE IMPACT OF LWR DECONTAMINATIONS ON SOLIDIFICATION, WASTE DISPOSAL AND ASSOCIATED OCCUPATIONAL EXPOSURE. Annual Report.

NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS.

NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA.

NUREG/CR-3491: OCA-II, A CODE FOR CALCULATING THE BEHAVIOR OF 2-D AND 3-D SURFACE FLAWS IN A PRESSURE VESSEL SUBJECTED TO TEMPERATURE AND PRESSURE TRANSIENTS.

NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.

NUREG/CR-3532: RESPONSE OF RUBBER INSULATION MATERIALS TO MONOENERGETIC ELECTRON IRRADIATIONS.

NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983.

NUREG/CR-3549: EVALUATION OF CONTAINMENT LEAK RATE TESTING CRITERIA.

NUREG/CR-3550: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Annual Summary Report - Fiscal Year 1983.

NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.

NUREG/CR-3562: STEAM GENERATOR TUBE INTEGRITY PROGRAM LEAK RATE TESTS-PROGRESS REPORT.

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.

NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis.

NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress

Report, July-December 1982.
NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982.
NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS. Summary Report - Plum Brook Reactor Facility.
NUREG/CR-3625: REVIEW AND DISCUSSION OF THE DEVELOPMENT OF SYNTHETIC APERTURE FOCUSING TECHNIQUE FOR ULTRASONIC TESTING (SAFT-UT).
NUREG/CR-3649: DYNAMIC TESTING OF AS-BUILT CIVIL ENGINEERING STRUCTURES -A REVIEW AND EVALUATION.

OFFICE OF NUCLEAR REACTOR REGULATION (POST 4/28/80)

CLINCH RIVER BREEDER REACTOR PROGRAM OFFICE
NUREG/CR-3224: AN ASSESSMENT OF CRBR CORE DISRUPTIVE ACCIDENT ENERGETICS.

DIVISION OF ENGINEERING
NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.
NUREG/CR-3614: CONSTANT EXTENSION RATE TESTING OF SA302 GRADE B MATERIAL IN NEUTRAL AND CHLORIDE SOLUTIONS.

DIVISION OF HUMAN FACTORS SAFETY
NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.
NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.
NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.

DIVISION OF SYSTEMS INTEGRATION (POST 811005)
NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982.
NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program.

DIVISION OF SAFETY TECHNOLOGY
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
NUREG/CR-3529: REVIEW OF THE ARKANSAS NUCLEAR ONE GENERATING STATION UNIT NO. 1 EMERGENCY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
NUREG/CR-3530: REVIEW OF THE DAVIS-BESSE UNIT NO. 1 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
NUREG/CR-3531: REVIEW OF SEABROOK UNITS 1 AND 2 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
NUREG/CR-3616: TRANSPORT AND SCREEN BLOCKAGE CHARACTERISTICS OF REFLECTIVE METALLIC INSULATION MATERIALS.

Contractor Index

This index lists, in alphabetical order, the contractors that prepared the NUREG/CR reports listed in this compilation. Listed below each contractor are the NUREG/CR numbers and titles of their reports. If further information is needed, refer to the main citation by the NUREG/CR number.

7

NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.

NUREG/CR-3645: A GUIDE TO LITERATURE RELEVANT TO THE ORGANIZATION AND ADMINISTRATION OF NUCLEAR POWER PLANTS.

BATTELLE MEMORIAL INSTITUTE, COLUMBUS LABORATORIES

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

NUREG/CR-3427 V03: LONG-TERM PERFORMANCE OF MATERIALS USED FOR HIGH-LEVEL WASTE PACKAGING. Third Quarterly Report, October-December 1983.

BATTELLE MEMORIAL INSTITUTE, PACIFIC NORTHWEST LABORATORIES

NUREG/CR-1755: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING NUCLEAR REACTORS AT MULTIPLE-REACTOR STATIONS.

NUREG/CR-2210: TECHNOLOGY, SAFETY AND COSTS OF DECOMMISSIONING REFERENCE INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS.

NUREG/CR-3070: MEASURED IN-REACTOR DATA AND POSTIRRADIATION OBSERVATIONS FOR IFA-527.

NUREG/CR-3071: IRRADIATION HISTORY AND INTERIM POSTIRRADIATION DATA FOR IFA-432.

NUREG/CR-3104: AQUIFER RESTORATION TECHNIQUES FOR IN-SITU LEACH URANIUM MINES.

NUREG/CR-3396: EXPERIENCE WITH THE SHIFT TECHNICAL ADVISOR POSITION. Interviews With Personnel From Nine Plants.

NUREG/CR-3449: LABORATORY EVALUATION OF LIMESTONE AND LIME NEUTRALIZATION OF ACIDIC URANIUM MILL TAILINGS SOLUTION. Progress Report.

NUREG/CR-3554: RADIONUCLIDE MIGRATION IN GROUNDWATER. Annual Progress Report For 1982.

NUREG/CR-3560: EVALUATION METHODS FOR THE CONSEQUENCES OF BELOW WATER TABLE MINE DISPOSAL OF URANIUM MILL TAILINGS.

NUREG/CR-3561: EDDY CURRENT ROUND ROBIN TEST ON LABORATORY PRODUCED INTERGRANULAR STRESS CORROSION CRACKED INCONEL STEAM GENERATOR TUBES.

NUREG/CR-3562: STEAM GENERATOR TUBE INTEGRITY PROGRAM LEAK RATE TESTS-PROGRESS REPORT.

NUREG/CR-3563: COBRA/TRAC SIMULATION OF SEMISCALE S-UT-2 TEST.

NUREG/CR-3573: PERSONNEL EXPOSURE FROM RIGHT CYLINDRICAL SOURCES (PERCS). The Theory, The Code And Examples.

NUREG/CR-3578: STEAM GENERATOR GROUP PROJECT PROGRESS REPORT. Task 3-Health Physics.

NUREG/CR-3579: STEAM GENERATOR GROUP PROJECT. Progress Report On Data Acquisition/Statistical Analysis.

NUREG/CR-3580: STEAM GENERATOR GROUP PROJECT. Semiannual Progress Report, July-December 1982.

NUREG/CR-3581: STEAM GENERATOR GROUP PROJECT. Annual Report - 1982.

NUREG/CR-3584: COMMONLY USED NUCLEAR MATERIAL MEASUREMENTS AND THEIR SOURCES OF ERROR.

NUREG/CR-3601: MANAGEMENT AND ORGANIZATIONAL ASSESSMENTS: A REVIEW OF SELECTED ORGANIZATIONS.

NUREG/CR-3602: FUEL PERFORMANCE ANNUAL REPORT FOR 1982.

NUREG/CR-3607: RADIONUCLIDE DISTRIBUTIONS AND MIGRATION MECHANISMS AT SHALLOW LAND BURIAL SITES: 1982 Annual Report of Research Investigations On The Distribution, Migration And Containment Of Radionuclides At Maxey Flats, Kentucky.

NUREG/CR-3621: SAFETY SYSTEM STATUS MONITORING.

NUREG/CR-3625: REVIEW AND DISCUSSION OF THE DEVELOPMENT OF SYNTHETIC APERTURE FOCUSING TECHNIQUE FOR ULTRASONIC TESTING (SAFT-UT).

NUREG/CR-3642: A COBRA/TRAC, BEST-ESTIMATE ANALYSIS OF A LARGE-BREAK ACCIDENT IN A PWR EQUIPPED WITH UPPER HEAD INJECTION.

NUREG/CR-3645: A GUIDE TO LITERATURE RELEVANT TO THE ORGANIZATION AND ADMINISTRATION OF NUCLEAR POWER PLANTS.

NUREG/CR-3674: DESIGNING VEGETATION COVERS FOR LONG-TERM STABILIZATION

OF URANIUM MILL TAILINGS.
BROOKHAVEN NATIONAL LABORATORY
NUREG/CR-2331 V03 N2: SAFETY RESEARCH PROGRAMS SPONSORED BY THE OFFICE OF NUCLEAR REGULATORY RESEARCH. Quarterly Progress Report, April-June 1983.
NUREG/CR-2721: SCOPING STUDY OF THE ALTERNATIVES FOR MANAGING WASTE CONTAINING CHELATING DECONTAMINATION CHEMICALS.
NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.
NUREG/CR-3091 V03: REVIEW OF WASTE PACKAGE VERIFICATION TESTS. Semiannual Report Covering The Period April-September 1983.
NUREG/CR-3444 V01: THE IMPACT OF LWR DECONTAMINATIONS ON SOLIDIFICATION, WASTE DISPOSAL AND ASSOCIATED OCCUPATIONAL EXPOSURE. Annual Report.
NUREG/CR-3496: REVIEW OF A TEST PROGRAM FOR QUALIFYING THE SOLIDIFICATION OF EPICOR II RESINS WITH CEMENT.
NUREG/CR-3529: REVIEW OF THE ARKANSAS NUCLEAR ONE GENERATING STATION UNIT NO. 1 EMERGENCY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
NUREG/CR-3530: REVIEW OF THE DAVIS-BESSE UNIT NO. 1 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
NUREG/CR-3531: REVIEW OF SEABROOK UNITS 1 AND 2 AUXILIARY FEEDWATER SYSTEM RELIABILITY ANALYSIS.
NUREG/CR-3614: CONSTANT EXTENSION RATE TESTING OF SA302 GRADE B MATERIAL IN NEUTRAL AND CHLORIDE SOLUTIONS.
NUREG/CR-3716: CONTEMPT4/MOD4. A Multicomponent Containment System Analysis Program.
CALIFORNIA, UNIV. OF, LOS ANGELES, CA
NUREG/CR-3615: HYDRODYNAMICS OF TWO PHASE FLOW THROUGH HOMOGENEOUS AND STRATIFIED POROUS LAYERS.
CORSTAR RESEARCH, INC.
NUREG/CR-3699: A SUMMARY OF CODES FOR WASTE PACKAGE PERFORMANCE ASSESSMENT.
DAMES & MOORE
NUREG/CR-3585: DE MINIMIS WASTE IMPACTS ANALYSIS METHODOLOGY.
DECISION RESEARCH, INC.
NUREG/CR-3508: STANDARD SETTING STANDARDS: A SYSTEMATIC APPROACH TO MANAGING PUBLIC HEALTH AND SAFETY RISKS.
EG&G, INC.
NUREG/CR-2335: RESULTS OF THE SEMISCALE MOD-2A NATURAL CIRCULATION EXPERIMENTS.
NUREG/CR-3461: RESPONSE TREE EVALUATION - IMPLICATIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN PROCESS CONTROL ROOMS.
NUREG/CR-3556: NONINTERACTIVE SIMULATION EVALUATION FOR CRT-GENERATED DISPLAYS.
NUREG/CR-3631: RESPONSE TREES AND EXPERT SYSTEMS FOR NUCLEAR REACTOR OPERATORS.
ENERGY, DEPT. OF
NUREG/CP-0050: PROCEEDINGS OF THE INTERNATIONAL BETA DOSIMETRY SYMPOSIUM. Held at Washington, DC February 15-18, 1983.
EVANS, D. D.
NUREG-1046 DRFT: DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTES IN THE UNSATURATED ZONE: TECHNICAL CONSIDERATIONS. Draft Report For Comment.
EXXON NUCLEAR CO., INC. (SUBS. OF EXXON CORP.)
NUREG/CR-3067: CALIBRATION SOURCES FOR THE G-M COUNTER USED WITH THE BNL AIR SAMPLER.
NUREG/CR-3512: RAPID FIELD METHOD FOR THE CONCENTRATION OF RADIOIODINE FROM MILK.
GENERAL PHYSICS CORP.
NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.
HANFORD ENGINEERING DEVELOPMENT LABORATORY

NUREG/CR-3285: PRE-TEST VISUAL EXAMINATION AND CRUD CHARACTERIZATION OF LWR RODS USED IN THE LONG-TERM, LOW-TEMPERATURE WHOLE ROD TEST.

HEALTH PHYSICS SOCIETY

NUREG/CP-0050: PROCEEDINGS OF THE INTERNATIONAL BETA DOSIMETRY SYMPOSIUM. Held at Washington, DC February 15-18, 1983.

IOWA STATE UNIV., AMES, IA

NUREG/CR-3127: PROBABILISTIC SEISMIC RESISTANCE OF STEEL CONTAINMENTS.

LAWRENCE LIVERMORE LABORATORY

NUREG/CR-3428: APPLICATION OF THE SSMRP METHODOLOGY TO THE SEISMIC RISK AT THE ZION NUCLEAR POWER PLANT.

NUREG/CR-3477: CONCENTRATIONS OF COPPER-BINDING PROTEINS IN LIVERS OF BLUEGILLS EXPOSED TO INCREASED CONCENTRATIONS OF SOLUBLE COPPER.

NUREG/CR-3478: REVIEW OF IMPACT OF COPPER RELEASED INTO FRESHWATER ENVIRONS.

NUREG/CR-3483: A STUDY OF THE REGULATORY POSITION ON POSTULATED PIPE RUPTURE LOCATION CRITERIA.

NUREG/CR-3526: IMPACT OF CHANGES IN DAMPING AND SPECTRUM PEAK BROADENING ON THE SEISMIC RESPONSE OF PIPING SYSTEMS.

NUREG/CR-3536: SIMULATION OF LOADING CONDITIONS FOR A TYPE A PACKAGE CONTAINING AMERICIUM-241 INVOLVED IN AN AIRPLANE CRASH AT DETROIT METRO AIRPORT IN JANUARY 1983.

LOS ALAMOS SCIENTIFIC LABORATORY

NUREG/CR-3224: AN ASSESSMENT OF CRBR CORE DISRUPTIVE ACCIDENT ENERGETICS.

NUREG/CR-3242: THE LOS ALAMOS NATIONAL LABORATORY/NEW MEXICO STATE UNIVERSITY FILTER PLUGGING TEST FACILITY DESCRIPTION AND PRELIMINARY TEST RESULTS.

NUREG/CR-3448: URANIUM HOLDUP MODELING.

NUREG/CR-3522 V01: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIALS, VOL 1: U Oxide Plus Graphite Powder.

NUREG/CR-3522 V02: REFERENCE MATERIALS FOR NONDESTRUCTIVE ASSAY OF SPECIAL NUCLEAR MATERIAL. Volume 2: Thin Metal Foils Of Highly Enriched Uranium.

MICHIGAN, UNIV. OF, ANN ARBOR, MI

NUREG/CR-3145 V02: GEOPHYSICAL INVESTIGATION OF THE WESTERN OHIO - INDIANA REGION. Annual Report, October 1982 - September 1983.

MOUND FACILITY/MONSANTO RESEARCH CORP.

NUREG/CR-2926: SIMS AND ESCA STUDIES OF POSSIBLE SODIUM URANATE PRECURSORS AS RELATED TO AEROSOL CHARACTERIZATION FROM A SIMULATED HCDA.

OAK RIDGE NATIONAL LABORATORY

NUREG/CR-2000 V02N12: LICENSEE EVENT REPORT (LER) COMPILATION. For Month Of December 1983.

NUREG/CR-2000 V03 N1: LICENSEE EVENT REPORT (LER) COMPILATION. For Month Of January 1984.

NUREG/CR-2000 V03 N2: LICENSEE EVENT REPORT (LER) COMPILATION. For Month Of February 1984.

NUREG/CR-2397: FUEL INVENTORY AND AFTERHEAT POWER STUDIES OF URANIUM-FUELED PRESSURIZED WATER REACTOR FUEL ASSEMBLIES USING THE SAS2 AND ORIGEN-S MODULES OF SCALE WITH AN ENDF/B-V UPDATED CROSS SECTION LIBRARY.

NUREG/CR-2810: VARIATIONS IN ZIRCALOY-4 CLADDING DEFORMATION IN REPLICATE LOCA SIMULATION TESTS.

NUREG/CR-2824 V01: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING MARCH 31, 1982.

NUREG/CR-3056: POPULATION DISTRIBUTION ANALYSIS FOR NUCLEAR POWER PLANT SITING.

NUREG/CR-3057: ANALYSIS OF AVAILABILITY OF PREVIOUSLY IDENTIFIED SITES UNDER ALTERNATIVE DEMOGRAPHIC CRITERIA.

NUREG/CR-3153: CALCULATION OF FLUID CIRCULATION PATTERNS IN THE

VICINITY OF SUBMERGED JETS USING ORSMAC.
NUREG/CR-3171: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST HI-2.
NUREG/CR-3172: FLOWER: A COMPUTER CODE FOR SIMULATING THREE-DIMENSIONAL FLOW, TEMPERATURE AND SALINITY CONDITIONS IN RIVERS, ESTUARIES AND COASTAL REGIONS.
NUREG/CR-3181: QUANTITY AND NATURE OF LWR AEROSOLS PRODUCED IN THE PRESSURE VESSEL DURING CORE HEATUP ACCIDENTS - A CHEMICAL EQUILIBRIUM ESTIMATE.
NUREG/CR-3200 V03: EDDY-CURRENT INSPECTION FOR STEAM GENERATOR TUBING PROGRAM QUARTERLY PROGRESS REPORT FOR PERIOD ENDING SEPTEMBER 30, 1983.
NUREG/CR-3275: JOB ANALYSIS OF THE ELECTRICIAN POSITION FOR THE NUCLEAR POWER PLANT MAINTENANCE PERSONNEL RELIABILITY MODEL.
NUREG/CR-3334 V02: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR APRIL-JUNE 1983.
NUREG/CR-3334 V03: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM QUARTERLY PROGRESS REPORT FOR JULY-SEPTEMBER 1983.
NUREG/CR-3389: VALENCE EFFECTS ON THE SORPTION OF NUCLIDES ON ROCKS AND MINERALS.
NUREG/CR-3422 V02: AEROSOL RELEASE AND TRANSPORT PROGRAM. Quarterly Progress Report For April-June 1983.
NUREG/CR-3439 V01: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 1.
NUREG/CR-3439 V02: A DESCRIPTION OF THE HARDWARE AND SOFTWARE OF THE POWER SPECTRAL DENSITY RECOGNITION (PSDREC) CONTINUOUS ON-LINE REACTOR SURVEILLANCE SYSTEM (CALIFORNIA DISTRIBUTION), VOLUME 2.
NUREG/CR-3482: ANALYSIS OF FERRITE DATA FROM PRODUCTION STAINLESS STEEL PIPE WELDS.
NUREG/CR-3490: THE ROLE OF GEOCHEMICAL FACTORS IN THE ASSESSMENT AND REGULATION OF GEOLOGIC DISPOSAL OF HIGH-LEVEL RADIOACTIVE WASTE.
NUREG/CR-3491: OCA-II, A CODE FOR CALCULATING THE BEHAVIOR OF 2-D AND 3-D SURFACE FLAWS IN A PRESSURE VESSEL SUBJECTED TO TEMPERATURE AND PRESSURE TRANSIENTS.
NUREG/CR-3492 V02: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, APRIL 1 JUNE 30, 1983.
NUREG/CR-3492 V03: HIGH-TEMPERATURE GAS-COOLED REACTOR SAFETY STUDIES FOR THE DIVISION OF ACCIDENT EVALUATION QUARTERLY PROGRESS REPORT, JULY - SEPTEMBER, 1983.
NUREG/CR-3501: THE EFFECTS OF DELAYING THE OPERATION OF A NUCLEAR POWER PLANT.
NUREG/CR-3502: HIGH DRYOUT QUALITY FILM BOILING AND STEAM COOLING HEAT TRANSFER DATA FROM A ROD BUNDLE.
NUREG/CR-3508: STANDARD SETTING STANDARDS: A SYSTEMATIC APPROACH TO MANAGING PUBLIC HEALTH AND SAFETY RISKS.
NUREG/CR-3523: A RANKING SCHEME FOR MAKING DECISIONS ON THE RELATIVE TRAINING IMPORTANCE OF POTENTIAL NUCLEAR POWER PLANT MALFUNCTIONS.
NUREG/CR-3525: MECHANISTIC CORE-WIDE MELTDOWN AND RELOCATION MODELING FOR BWR APPLICATIONS.
NUREG/CR-3543: SURVEY OF OPERATING EXPERIENCE FROM LERS TO IDENTIFY AGING TREND. Progress Report September 1983.
NUREG/CR-3549: EVALUATION OF CONTAINMENT LEAK RATE TESTING CRITERIA.
NUREG/CR-3598: OCCUPATIONAL RADIOLOGICAL MONITORING AT URANIUM MILLS.
NUREG/CR-3622: A PROBABILISTIC MODEL OF ANNULAR-DISPERSED FLOW IN A REACTOR SUBCHANNEL AS SEEN BY CYLINDRICAL GEOMETRY IMPEDANCE PROBES.
NUREG/CR-3730: EVALUATION OF RADIONUCLIDE GEOCHEMICAL INFORMATION DEVELOPED BY DOE HIGH-LEVEL NUCLEAR WASTE REPOSITORY SITE PROJECTS.

REMOTE TECHNOLOGY CORP.

NUREG/CR-3717: EVALUATION OF ROBOTIC INSPECTION SYSTEMS AT NUCLEAR POWER PLANTS.

RENSSELAER POLYTECHNIC INSTITUTE, TROY, NY

NUREG/CR-3577: THE MEASUREMENT OF COUNTERCURRENT PHASE SEPARATION AND DISTRIBUTION IN A TWO-DIMENSIONAL TEST SECTION.

NUREG/CR-3666: ASSESSMENT OF THE IMPLICATIONS OF CONVERSION OF UNIVERSITY RESEARCH AND TRAINING REACTORS TO LOW ENRICHMENT URANIUM FUEL.

SANDIA LABORATORIES

NUREG/CR-2679 V03: ADVANCED REACTOR SAFETY RESEARCH QUARTERLY REPORT, JULY-SEPTEMBER 1982.

NUREG/CR-2812: THE RELATIVE IMPORTANCE OF TEMPERATURE, PH AND BORIC ACID CONCENTRATION ON RATES OF H2 PRODUCTION FROM GALVANIZED STEEL CORROSION.

NUREG/CR-2932 V02: EQUIPMENT QUALIFICATION RESEARCH TEST OF ELECTRIC CABLE WITH FACTORY SPLICES AND INSULATION REWORK TEST NO. 2, REPORT NO. 2.

NUREG/CR-3309: A SIMULATOR-BASED STUDY OF HUMAN ERRORS IN NUCLEAR POWER PLANT CONTROL ROOM TASKS.

NUREG/CR-3329 V03: THERMAL/HYDRAULIC ANALYSIS RESEARCH PROGRAM QUARTERLY REPORT JULY-SEPTEMBER 1983.

NUREG/CR-3351: SECURITY OFFICER TACTICAL TRAINING ISSUES INVOLVING ESS EQUIPMENT.

NUREG/CR-3412: CONTAINMENT INTEGRITY PROGRAM QUARTERLY REPORT JANUARY-MARCH 1983.

NUREG/CR-3484: TRAN B-1: EXPERIMENTAL INVESTIGATION OF FUEL CRUST STABILITY ON SURFACES OF AN ANNULAR FLOW CHANNEL.

NUREG/CR-3532: RESPONSE OF RUBBER INSULATION MATERIALS TO MONOENERGETIC ELECTRON IRRADIATIONS.

NUREG/CR-3547: A SETS USER'S MANUAL FOR ACCIDENT SEQUENCE ANALYSIS.

NUREG/CR-3616: TRANSPORT AND SCREEN BLOCKAGE CHARACTERISTICS OF REFLECTIVE METALLIC INSULATION MATERIALS.

SAS OF TEXAS, LTD.

NUREG/CR-3619: SURVEY OF COMMERCIAL NON-NUCLEAR SECURITY PROGRAMS.

SCIENCE APPLICATIONS, INC.

NUREG/CR-2815: PROBABILISTIC SAFETY ANALYSIS PROCEDURES GUIDE.

SZAWLEWICZ, S.A.

NUREG/CP-0048 V01: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY INFORMATION MEETING.

NUREG/CP-0048 V02: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V03: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V04: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V05: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

NUREG/CP-0048 V06: PROCEEDINGS OF THE ELEVENTH WATER REACTOR SAFETY RESEARCH INFORMATION MEETING.

TEKNEKRON, INC.

NUREG/CR-3636: BENCHMARK PROBLEMS FOR REPOSITORY DESIGN MODELS.

UNION CARBIDE CORP.

NUREG/CR-3251: THE ROLE OF SECURITY DURING SAFETY-RELATED EMERGENCIES AT NUCLEAR POWER PLANTS.

UNITED NUCLEAR CORP.

NUREG/CR-3550: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS Annual Summary Report - Fiscal Year 1983.

NUREG/CR-3605: EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS Summary Report - Plum Brook Reactor Facility.

WASHINGTON, UNIV. OF, SEATTLE, WA

NUREG/CR-3698: AN AGE STRUCTURED STOCHASTIC RECRUITMENT MODEL FOR ASSESSMENT POWER PLANT IMPACT.

WATER, WASTE & LAND, INC.

NUREG/CR-3390: DOCUMENTATION AND USER'S GUIDE: UNSAT2 - VARIABLY SATURATED FLOW MODEL. (Including 4 Example Problems).

WESTINGHOUSE ELECTRIC CORP.

NUREG/CR-3661: PROTOTYPICAL STEAM GENERATOR (MB-2) TRANSIENT TESTING PROGRAM. Task Plan/Scaling Analysis Report.

Licensed Facility Index

This index lists the facilities that were the subject of NRC staff or contractor reports. The facility names are arranged in alphabetical order. They are preceded by their Docket number and followed by the report number. If further information is needed, refer to the main citation by the NUREG number.

NRC FORM 335
(2-84)
NRCM 1102
3201, 3202

U.S. NUCLEAR REGULATORY COMMISSION

BIBLIOGRAPHIC DATA SHEET

SEE INSTRUCTIONS ON THE REVERSE

1. REPORT NUMBER (Assigned by TIDC, add Vol. No., if any)
NUREG-0304, Vol. 9, No. 1

2. TITLE AND SUBTITLE
Regulatory and Technical Reports Compilation for First Quarter 1984

3. LEAVE BLANK

4. DATE REPORT COMPLETED
MONTH | YEAR

5. AUTHOR(S)

6. DATE REPORT ISSUED
MONTH: May | YEAR: 1984

7. PERFORMING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code)
Division of Technical Information and Document Control
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555

8. PROJECT/TASK/WORK UNIT NUMBER

9. FIN OR GRANT NUMBER

10. SPONSORING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code)
Same as 7, above.

11a. TYPE OF REPORT
Quarterly

b. PERIOD COVERED (Inclusive dates)
January - March 1984

12. SUPPLEMENTARY NOTES

13. ABSTRACT (200 words or less)

This compilation lists all NRC regulatory and technical reports published under the NUREG series during the first quarter of 1984.

14. DOCUMENT ANALYSIS – a. KEYWORDS/DESCRIPTORS
abstract
index

b. IDENTIFIERS/OPEN-ENDED TERMS

15. AVAILABILITY STATEMENT
Unlimited

16. SECURITY CLASSIFICATION
(This page) Unclassified
(This report) Unclassified

17. NUMBER OF PAGES

18. PRICE

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

FIRST CLASS MAIL
POSTAGE & FEES PAID
USNRC
WASH. D.C.
PERMIT No. G67

1 Main Citations and Abstracts

2 Contractor Report Number Index

3 Personal Author Index

4 Subject Index

120555078877 1 99999
US NRC
ADM-DIV OF TIDC
POLICY & PUB MGT BR-PDR NUREG
W-501
WASHINGTON DC 20555

5 NRC Originating Organization Index

6 NRC Contractor Sponsor Index

7 Contractor Index

8 Licensed Facility Index