

NUREG-0304  
Vol. 20, No. 2

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# Regulatory and Technical Reports (Abstract Index Journal)

Compilation for  
Second Quarter 1995  
April - June

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**U.S. Nuclear Regulatory Commission**

Office of Administration



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*A year's subscription of this report consists of four quarterly issues.*

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Date Published: September 1995

**Publications Branch**  
**Division of Freedom of Information and Publications Services**  
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## 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:

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

Secondary Report Number Index  
Personal Author Index  
Subject Index  
NRC Originating Organization Index (Staff Reports)  
NRC Originating Organization Index (International Agreements)  
NRC Contract Sponsor Index (Contractor Reports)  
Contractor Index  
International Organization 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-0808: 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), (9) the microfiche address (for NRC internal use).

### Grant Report

NUREG/GR-0013: APPLICATIONS OF A NEW MAGNETIC MONITORING TECHNIQUE TO IN SITU EVALUATION OF FATIGUE DAMAGE IN FERROUS COMPONENTS. JILES, D.C.; BINER, S.B.; GOVINDARAJU, M.; et al. Iowa State Univ., Ames, IA. June 1994. 41 pp. 9407250286. 80328:195.

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), (9) the microfiche address (for NRC internal use).

### International Agreement Report

NUREG/IA-0001: ASSESSMENT OF TRAC-PD2 USING SUPER CANNON AND HDR EXPERIMENTAL DATA. NEUMANN, U. Kraftweek Union. August 1986. 223 pp. 8608270424. 37659:138.

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 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

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### 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 or the work being reported.

In addition to the NUREG and NUREG/CR codes, NUREG/CP is used for NRC-sponsored conference proceedings, NUREG/GR is used for NRC grant reports, and NUREG/IA is used for international agreement reports.

All these report codes are controlled and assigned by the staff of the Technical Publications Section of the NRC Division of Freedom of Information and Publications Services.





## 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 conference report, NUREG/CR-XXXX is an NRC contractor-prepared report, and NUREG/IA-XXXX is an international agreement report. The bibliographic information (see Preface for details) is followed by a brief abstract of this report.

**NUREG-0020 V19:** LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of December 31, 1994. (Gray Book I) HARTFIELD, R.A. Office of Information Resources Management (Post 890205). April 1995. 350pp. 9504260255. 83635:001.

The Nuclear Regulatory Commission's annual summary of licensed nuclear power reactor data is based primarily on the report of operating data submitted by licensees for each unit for the month of December because that report contains data for the month of December, the year to date (in this case calendar year 1994) and cumulative data, usually from the date of commercial operation. The data is not independently verified, but various computer checks are made. The report is divided into two sections. The first contains summary highlights and the second contains data on each individual unit in commercial operation. Section 1 capacity and availability factors are simple arithmetic averages. Section 2 items in the cumulative column are generally as reported by the licensee and notes as to the use of weighted averages and starting dates other than commercial operation are provided.

**NUREG-0040 V19 N01:** LICENSEE CONTRACTOR AND VENDOR INSPECTION STATUS REPORT. Quarterly Report. January-March 1995. (White Book) \* Office of Nuclear Reactor Regulation (Post 941001). May 1995. 119pp. 9506020502. 84149:041.

This periodical covers the results of inspections performed by the NRC's Special Inspection Branch, Vendor Inspection Section, that have been distributed to the inspected organizations during the period from January through March 1995.

**NUREG-0498 S01:** FINAL ENVIRONMENTAL STATEMENT RELATED TO THE OPERATION OF WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2. Docket Nos. 50-390 And 50-391. (Tennessee Valley Authority) \* Associate Director for Advanced Reactors & License Renewal (ADAR) (Post 941001). April 1995. 368pp. 9505180344. 83965:118.

The Final Environmental Statement (FES) issued in 1978 represents the Nuclear Regulatory Commission's (NRC's) previous environmental review related to the operation of Watts Bar Nuclear (WBN) Plant. The purpose of this NRC review is to discuss the effects of observed changes in environment and to evaluate the changes in environmental impacts that have occurred as a result of changes in the WBN Plant design and proposed methods of operations since the last environmental review. A full scope of environmental topics has been evaluated, including regional demography, land and water use, meteorology, terrestrial and aquatic ecology, radiological and nonradiological impacts on humans and the environment, socioeconomic impacts, and environmental justice. The staff concluded that there are no significant changes in the environmental impacts since the NRC 1978 FES. OL from changes in plant design, proposed methods of operation, or changes in the environment. The applicant's preoperational and operational monitoring programs were reviewed and found to be appropriate for establishing baseline conditions and ongoing assessments of environmental impacts. The staff also conducted an analysis of plant operation with severe accident mitigation design alternatives

(SAMDA) and concluded that none of the SAMDAs, beyond the three procedural changes that the applicant committed to implement, would be cost-beneficial for further mitigating environmental impacts.

**NUREG-0540 V17 N02:** TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. February 1-28, 1995. \* Division of Freedom of Information & Publications Services (Post 940714). April 1995. 337pp. 9504250369. 83629:001.

This document is a monthly publication containing descriptions of information received and generated by the U.S. Nuclear Regulatory Commission (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, Corporate Source, Report Number, and Cross Reference of Enclosures to Principal Documents.

**NUREG-0540 V17 N03:** TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. March 1-31, 1995. \* Division of Freedom of Information & Publications Services (Post 940714). May 1995. 360pp. 9506020497. 84148:024.

See NUREG-0540, V17, N02 abstract.

**NUREG-0540 V17 N04:** TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. April 1-30, 1995. \* Division of Freedom of Information & Publications Services (Post 940714). June 1995. 207pp. 9506280447. 84468:129.

See NUREG-0540, V17, N02 abstract.

**NUREG-0725 R10:** PUBLIC INFORMATION CIRCULAR FOR SHIPMENTS OF IRRADIATED REACTOR FUEL. \* Division of Industrial & Medical Nuclear Safety (Post 870729). April 1995. 30pp. 9505180571. 83980:001.

This circular has been prepared to provide information on the shipment of irradiated reactor fuel (spent fuel) subject to regulation by the Nuclear Regulatory Commission (NRC), and to meet the requirements of Public Law 96-295. The report provides a brief description of NRC authority for certain aspects of transporting spent fuel. It provides descriptive statistics on spent fuel shipments regulated by the NRC from 1979 to 1994. It also lists detailed highway and railway segments used within each state from January 1, 1993, through December 31, 1994.

**NUREG-0750 V41 I01:** INDEXES TO NUCLEAR REGULATORY COMMISSION ISSUANCES. January-March 1995. \* Division of Freedom of Information & Publications Services (Post 940714). June 1995. 34pp. 9507060350. 84533:306.

Digests and indexes for issuances of the Commission, the Atomic Safety and Licensing Board Panel, The Administrative Law Judges, the Directors' Decisions, and the Decisions on Petitions for Rulemaking are presented.

**NUREG-0750 V41 N02:** NUCLEAR REGULATORY COMMISSION ISSUANCES FOR FEBRUARY 1995. Pages 71-178. \* Division of Freedom of Information & Publications Services (Post 940714). May 1995. 115pp. 9505230100. 84017:107.

## 2 Main Citations and Abstracts

Legal issuances of the Commission, the Atomic Safety and Licensing Board Panel, the Administrative Law Judges, and NRC Program Offices are presented.

**NUREG-0750 V41 N03:** NUCLEAR REGULATORY COMMISSION ISSUANCES FOR MARCH 1995. Pages 179-243. \* Division of Freedom of Information & Publications Services (Post 940714). May 1995. 72pp. 9506140062. 84297:130.

See NUREG-0750,V41,N02 abstract.

**NUREG-0750 V41 N04:** NUCLEAR REGULATORY COMMISSION ISSUANCES FOR APRIL 1995. Pages 245-319. \* Division of Freedom of Information & Publications Services (Post 940714). June 1995. 83pp. 9507120290. 84633:001.

See NUREG-0750,V41,N02 abstract.

**NUREG-0837 V15 N01:** NRC TLD DIRECT RADIATION MONITORING NETWORK. Progress Report. January-March 1995. STRUCKMEYER, R. Region 1 (Post 820201). May 1995. 230pp. 9506140068. 84298:001.

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 facilities throughout the country for the first quarter of 1995.

**NUREG-0847 S15:** 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) TAM, P.S. Division of Reactor Projects I/II (DRPE) Post 941001. June 1995. 189pp. 9507120275. 84634:001.

Supplement No. 15 to the Safety Evaluation Report for the application filed by the Tennessee Valley Authority for license to operate Watts Bar Nuclear Plant, Units 1 and 2, Docket Nos. 50-390 and 50-391, located in Rhea County Tennessee, has been prepared by the Office of Nuclear Reactor Regulation of the Nuclear Regulatory Commission. The purpose of this supplement is to update the Safety Evaluation with (1) additional information submitted by the applicant since Supplement No. 14 was issued, and (2) matters that the staff had under review when Supplement No. 14 was issued.

**NUREG-0933 S16:** A PRIORITIZATION OF GENERIC SAFETY ISSUES. EMRIT, R. Division of Engineering Technology (Post 941217). April 1995. 266pp. 9505190010. 83981:001.

The report presents the safety priority ranking for generic safety issues related to nuclear power plants. The purpose of these rankings is to assist in the timely and efficient allocation of NRC resources for the resolution of those safety issues that have a significant potential for reducing risk. The safety priority rankings are HIGH, MEDIUM, LOW, and DROP, and have been assigned on the basis of risk significance estimates, the ratio of risk to costs and other impacts estimated to result if resolution of the safety issues were implemented, and the consideration of uncertainties and other quantitative or qualitative factors. To the extent practical, estimates are quantitative.

**NUREG-0940 V14 N1 P1:** ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, REACTOR LICENSEES. Quarterly Progress Report, January-March 1995. \* Ofc of Enforcement (Post 870413). May 1995. 360pp. 9506160009. 84333:017.

This compilation summarizes significant enforcement actions that have been resolved during one quarterly period (January - March 1995) and includes copies of letters, Notices, and Orders sent by the Nuclear Regulatory Commission to reactor licensees with respect to these enforcement actions. It is anticipated that the information in this publication will be widely disseminated to managers and employees engaged in activities licensed by the NRC, so that actions can be taken to improve safety by avoiding future violations similar to those described in this publication.

**NUREG-0940 V14 N1 P2:** ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, MEDICAL LICENSEES. Quarterly Progress Report, January-March 1995. \* Ofc of Enforcement (Post 870413). May 1995. 300pp. 9506140141. 84301:001.

This compilation summarizes significant enforcement actions that have been resolved during one quarterly period (January - March 1995) and includes copies of letters, Notices, and Orders sent by the Nuclear Regulatory Commission to medical licensees with respect to these enforcement actions. It is anticipated that the information in this publication will be widely disseminated to managers and employees engaged in activities licensed by the NRC, so that actions can be taken to improve safety by avoiding future violations similar to those described in this publication.

**NUREG-0940 V14 N1 P3:** ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, MATERIAL LICENSEES (NON-MEDICAL). Quarterly Progress Report, January-March 1995. \* Ofc of Enforcement (Post 870413). May 1995. 439pp. 9506160045. 84331:306.

This compilation summarizes significant enforcement actions that have been resolved during one quarterly period (January - March 1995) and includes copies of letters, Notices, and Orders sent by the Nuclear Regulatory Commission to Material Licensees (non-Medical) with respect to these enforcement actions. It is anticipated that the information in this publication will be widely disseminated to managers and employees engaged in activities licensed by the NRC, so that actions can be taken to improve safety by avoiding future violations similar to those described in this publication.

**NUREG-1125 V16:** A COMPILATION OF REPORTS OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS. 1994 Annual. \* ACRS - Advisory Committee on Reactor Safeguards. April 1995. 115pp. 9505190009. 83980:082.

This compilation contains 30 ACRS reports submitted to the Commission, or to the Executive Director for Operations, during calendar year 1994. It also includes a report to the Congress on the NRC Safety Research Program. All reports have been made available to the public through the NRC Public Document Room and the U.S. Library of Congress. The reports are categorized by the most appropriate generic subject area and by chronological order within subject area.

**NUREG-1275 V11:** OPERATING EXPERIENCE FEEDBACK REPORT - TURBINE-GENERATOR OVERSPEED PROTECTION SYSTEM. Commercial Power Reactors. ORNSTEIN, H.L. Division of Safety Programs (Post 870413). April 1995. 117pp. 9505180319. 83965:001.

The report presents the results of the U.S. Nuclear Regulatory Commission's Office for Analysis and Evaluation of Operational Data (AEOD) review of operating experience of main turbine-generator overspeed and overspeed protection systems. AEOD's study provides insight into the shortcomings in the design, operation, maintenance, testing, and human factors associated with turbine overspeed protection systems. It includes an in-depth examination of the turbine overspeed event that occurred on November 9, 1991, at the Salem Unit 2 Nuclear Power Plant. It also provides information concerning actions taken by other utilities and the turbine manufacturers as a result of the Salem overspeed event. AEOD's study reviewed operating procedures and plant practices. It noted differences between turbine manufacturer designs and recommendations for operations, maintenance, and testing, and also identified significant variations in the manner that individual plants maintain and test their turbine overspeed protection systems.

**NUREG-1280 R01:** STANDARD FORMAT AND CONTENT ACCEPTANCE CRITERIA FOR THE MATERIAL CONTROL AND ACCOUNTING (MC&A) REFORM AMENDMENT. \* Division of Fuel Cycle Safety & Safeguards (Post 930207). April 1995. 119pp. 9505180530. 83968:001.

In 1987 the NRC revised the material control and accounting requirements for NRC licensees authorized to possess and use a formula quantity (i.e., 5 formula kilograms or more) of strategic special nuclear material. Those revisions issued as 10CFR 47.51-59 require timely monitoring of in-process inventory and discrete items to detect anomalies potentially indicative of material losses. Timely detection and enhanced loss localization capabilities are beneficial to alarm resolution and also for material recovery in the event of an actual loss. NUREG-1280 was issued in 1987 to present criteria that could be used by applicants, licensees, and NRC license reviewers in the initial preparation and subsequent review of fundamental nuclear material control (FNMC) plans submitted in response to the Reform Amendment. This document is also intended for both licensees and license reviewers with respect to FNMC plan revisions. General performance objectives, system capabilities, process monitoring, item monitoring, alarm resolution, quality assurance, and accounting are addressed. This revision to NUREG-1280 is an expansion of the initial edition, which clarifies and expands upon several topics and addresses issues identified under Reform Amendment implementation experience.

**NUREG-1350 V07: NUCLEAR REGULATORY COMMISSION INFORMATION DIGEST.** 1995 Edition. STADLER, L. Division of Budget & Analysis (Post 890205). March 1995. 67pp. 9505230149. 84017:040.

The Nuclear Regulatory Commission Information Digest (digest) provides a summary of information about the U.S. Nuclear Regulatory Commission (NRC), NRC's regulatory responsibilities, the activities NRC licenses, and general information on domestic and worldwide nuclear energy. The digest, published annually, is a compilation of nuclear- and NRC-related data and is designed to provide a quick reference to major facts about the agency and the industry it regulates. In general, the data cover 1975 through 1993, with exceptions noted. Information on generating capacity and average capacity factor for operating U.S. commercial nuclear power reactors is obtained from monthly operating reports that are submitted directly to the NRC by the licensee. This information is reviewed by the NRC for consistency only and no independent validation and/or verification is performed.

**NUREG-1415 V07 N02: OFFICE OF THE INSPECTOR GENERAL.** Semiannual Report To Congress, October 1, 1994 - March 31, 1995. BARCHI, T.; NORTON, L.; GRODIN, M.; et al. Office of the Inspector General (Post 890417). June 1995. 50pp. 9506220103. 84394:337.

The Inspector General is required by the Inspector General Act of 1978, as amended, to prepare a "Semiannual Report" to the U.S. Congress that summarizes program activities. The 6-month reporting period ends March 31 and September 30. The Inspector General's report is submitted to the Chairman of the NRC not later than April 30 and October 31, respectively. The Chairman comments on the Inspector General's report and prepares his own, as required by the Act, and submits both reports to Congress no later than November 30 and May 31, respectively.

**NUREG-1430 V01 R01: STANDARD TECHNICAL SPECIFICATIONS BABCOCK AND WILCOX PLANTS.** Specifications. \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 326pp. 9506220126. 84395:027.

This report documents the results of the combined effort of the NRC and the industry to produce improved Standard Technical Specifications (STS), Revision 1 for Babcock & Wilcox Plants. The changes reflected in Revision 1 resulted from the experience gained from license amendment applications to convert to these improved STS or to adopt partial improvements to existing technical specifications. This NUREG is the result of extensive public technical meetings and discussions between the Nuclear Regulatory Commission (NRC) staff and various nuclear power plant licensees, Nuclear Steam Supply System (NSSS) Owners Groups, NSSS vendors, and the Nuclear Energy Insti-

tute (NEI). The improved STS were developed based on the criteria in the Final Commission Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 22, 1993. The improved STS will be used as the basis for individual nuclear power plant licensees to develop improved plant-specific technical specifications. This report contains three volumes. Volume 1 contains the Specifications for all chapters and sections of the improved STS. Volume 2 contains the Bases for Chapters 2.0 and 3.0, and Sections 3.1 - 3.3 of the improved STS. Volume 3 contains the Bases for Sections 3.4 - 3.9 of the improved STS.

**NUREG-1430 V02 R01: STANDARD TECHNICAL SPECIFICATIONS BABCOCK AND WILCOX PLANTS.** Bases (Sections 2.0 - 3.3). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 300pp. 9506220131. 84396:001.

See NUREG-1430,V01,R01 abstract.

**NUREG-1430 V03 R01: STANDARD TECHNICAL SPECIFICATIONS BABCOCK AND WILCOX PLANTS.** Bases (Sections 3.4 - 3.9). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 350pp. 9506220136. 84396:302.

See NUREG-1430,V01,R01 abstract.

**NUREG-1431 V01 R01: STANDARD TECHNICAL SPECIFICATIONS WESTINGHOUSE PLANTS.** Specifications. \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 350pp. 9506280476. 84456:001.

This report documents the results of the combined effort of the NRC and the industry to produce improved Standard Technical Specifications (STS), Revision 1 for Westinghouse Plants. The changes reflected in Revision 1 resulted from the experience gained from license amendment applications to convert to these improved STS or to adopt partial improvements to existing technical specifications. This report is the result of extensive public technical meetings and discussions between the Nuclear Regulatory Commission (NRC) staff and various nuclear power plant licensees, Nuclear Steam Supply System (NSSS) Owners Groups, NSSS vendors, and the Nuclear Energy Institute (NEI). The improved STS were developed based on the criteria in the Final Commission Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 22, 1993. The improved STS will be used as the basis for individual nuclear power plant licensees to develop improved plant-specific technical specifications. This report contains three volumes. Volume 1 contains the Specifications for all chapters and sections of the improved STS. Volume 2 contains the Bases for Chapters 2.0 and 3.0, and Sections 3.1 - 3.3 of the improved STS. Volume 3 contains the Bases for Sections 3.4 - 3.9 of the improved STS.

**NUREG-1431 V02 R01: STANDARD TECHNICAL SPECIFICATIONS WESTINGHOUSE PLANTS.** Bases (Sections 2.0 - 3.3). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 350pp. 9506280489. 84458:001.

See NUREG-1431,V01,R01 abstract.

**NUREG-1431 V03 R01: STANDARD TECHNICAL SPECIFICATIONS WESTINGHOUSE PLANTS.** Bases (Sections 3.4 - 3.9). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 500pp. 9506280506. 84459:001.

See NUREG-1431,V01,R01 abstract.

**NUREG-1432 V01 R01: STANDARD TECHNICAL SPECIFICATIONS COMBUSTION ENGINEERING PLANTS.** Specifications. \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 442pp. 9506220142. 84397:326.

This report documents the results of the combined effort of the NRC and the industry to produce improved Standard Technical Specifications (STS), Revision 1 for Combustion Engineering Plants. The changes reflected in Revision 1 resulted from the experience gained from license amendment applications to convert to these improved STS or to adopt partial improvements to existing technical specifications. This report is the

#### 4 Main Citations and Abstracts

result of extensive public technical meetings and discussions between the Nuclear Regulatory Commission (NRC) staff and various nuclear power plant licensees, Nuclear Steam Supply System (NSSS) Owners Groups, NSSS vendors, and the Nuclear Energy Institute (NEI). The improved STS were developed based on the criteria in the Final Commission Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 22, 1993. The improved STS will be used as the basis for individual nuclear power plant licensees to develop improved plant-specific technical specifications. This report contains three volumes. Volume 1 contains the Specifications for all chapters and sections of the improved STS. Volume 2 contains the Bases for Chapters 2.0 and 3.0, and Sections 3.1 - 3.3 of the improved STS. Volume 3 contains the Bases for Sections 3.4 - 3.9 of the improved STS.

**NUREG-1432 V02 R01: STANDARD TECHNICAL SPECIFICATIONS COMBUSTION ENGINEERING PLANTS.** Bases (Sections 2.0 - 3.3). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 450pp. 9506220171. 84399:040.  
See NUREG-1432,V01,R01 abstract.

**NUREG-1432 V03 R01: STANDARD TECHNICAL SPECIFICATIONS COMBUSTION ENGINEERING PLANTS.** Bases (Sections 3.4 - 3.9). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 602pp. 9506220172. 84400:126.  
See NUREG-1432,V01,R01 abstract.

**NUREG-1433 V01 R01: STANDARD TECHNICAL SPECIFICATIONS GENERAL ELECTRIC PLANTS BWR/4.** Specifications. \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 388pp. 9506290155. 84461:001.

This report documents the results of the combined effort of the NRC and the industry to produce improved Standard Technical Specifications (STS), Revision 1 for General Electric BWR/4 Plants. The changes reflected in Revision 1 resulted from the experience gained from license amendment applications to convert to the improved STS or to adopt partial improvements to existing technical specifications. This report is the result of extensive public technical meetings and discussions between the Nuclear Regulatory Commission (NRC) staff and various nuclear power plant licensees, Nuclear Steam Supply System (NSSS) Owners Groups, NSSS vendors, and the Nuclear Energy Institute (NEI). The improved STS were developed based on the criteria in the Final Commission Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 22, 1993. The improved STS will be used as the basis for individual nuclear power plant licensees to develop improved plant-specific technical specifications. This report contains three volumes. Volume 1 contains the Specifications for all chapters and sections of the improved STS. Volume 2 contains the Bases for Chapters 2.0 and 3.0, and Sections 3.1 - 3.3 of the improved STS. Volume 3 contains the Bases for Sections 3.4 - 3.10 of the improved STS.

**NUREG-1433 V02 R01: STANDARD TECHNICAL SPECIFICATIONS GENERAL ELECTRIC PLANTS BWR/4.** Bases (Sections 2.0 - 3.3). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 338pp. 9506290159. 84462:025.  
See NUREG-1433,V01,R01 abstract.

**NUREG-1433 V03 R01: STANDARD TECHNICAL SPECIFICATIONS GENERAL ELECTRIC PLANTS BWR/4.** Bases (Sections 3.4 - 3.10). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 422pp. 9506290164. 84463:001.  
See NUREG-1433,V01,R01 abstract.

**NUREG-1434 V01 R01: STANDARD TECHNICAL SPECIFICATIONS GENERAL ELECTRIC PLANTS, BWR/6.** Specifications. \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 412pp. 9506290222. 84466:001.

This report documents the results of the combined effort of the NRC and the industry to produce improved Standard Technical Specifications (STS), Revision 1 for General Electric BWR/6 Plants. The changes reflected in Revision 1 resulted

from the experience gained from license amendment applications to convert to these improved STS or to adopt partial improvements to existing technical specifications. This report is the result of extensive public technical meetings and discussions between the Nuclear Regulatory Commission (NRC) staff and various nuclear power plant licensees, Nuclear Steam Supply System (NSSS) Owners Groups, NSSS vendors, and the Nuclear Energy Institute (NEI). The improved STS were developed based on the criteria in the Final Commission Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 22, 1993. The improved STS will be used as the basis for individual nuclear power plant licensees to develop improved plant-specific technical specifications. This report contains three volumes. Volume 1 contains the Specifications for all chapters and sections of the improved STS. Volume 2 contains the Bases for Chapters 2.0 and 3.0, and Sections 3.1 - 3.3 of the improved STS. Volume 3 contains the Bases for Sections 3.4 - 3.10 of the improved STS.

**NUREG-1434 V02 R01: STANDARD TECHNICAL SPECIFICATIONS GENERAL ELECTRIC PLANTS, BWR/6.** Bases (Sections 2.0 - 3.3). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 356pp. 9506290228. 84464:059.  
See NUREG-1434,V01,R01 abstract.

**NUREG-1434 V03 R01: STANDARD TECHNICAL SPECIFICATIONS GENERAL ELECTRIC PLANTS, BWR/6.** Bases 3.4 - 3.10). \* Office of Nuclear Reactor Regulation (Post 941001). April 1995. 444pp. 9506290230. 84467:049.  
See NUREG-1434,V01,R01 abstract.

**NUREG-1470 V04: FINANCIAL STATEMENT FOR FISCAL YEAR 1994.** \* Office of the Controller (Post 890205). March 1995. 84pp. 9505180277. 83967:148.

The Chief Financial Officer's Act of 1990 requires the NRC Chief Financial Officer to prepare and submit an annual financial statement to the Director of the Office of Management and Budget (OMB). The OMB has replaced the requirement for the CFO's Annual Report with the annual financial statement. The annual financial statement was previously included in the Chief Financial Officer's Annual Report. This report is the fourth annual report for the NRC and includes an overview of the NRC, the audited principal financial statements and audit reports for fiscal year 1994, and supplemental financial and management information.

**NUREG-1478 R01: NON-POWER REACTOR OPERATOR LICENSING EXAMINER STANDARDS.** \* Office of Nuclear Reactor Regulation (Post 941001). June 1995. 172pp. 9507060351. 84533:100.

The Non-Power Reactor Operator Licensing Examiner Standards provide policy and guidance to NRC examiners and establish the procedures and practices for examining licensees and applicants for NRC operator licenses pursuant to Part 55 of Title 10 of the Code of Federal Regulations (10 CFR Part 55). They are intended to assist NRC examiners and facility licensees to better understand the examination process and to ensure the equitable and consistent administration of examinations to all applicants. These standards are not a substitute for the operator licensing regulations and are subject to revision or other internal operator examination licensing policy changes. As appropriate, these standards will be revised periodically to accommodate comments and reflect new information or experience.

**NUREG-1482: GUIDELINES FOR INSERVICE TESTING AT NUCLEAR POWER PLANTS.** CAMPBELL, P.L. Office of Nuclear Reactor Regulation, Director (Post 870411). April 1995. 328pp. 9505030476. 83746:022.

In this report, the staff gives licensees guidelines for developing and implementing programs for the inservice testing of pumps and valves at commercial nuclear power plants. The report includes U.S. Nuclear Regulatory Commission guidance

and recommendations on inservice testing issues. The staff discusses the regulations, the components to be included in an inservice testing program, and the preparation and content of cold shutdown and refueling outage justifications and requests for relief from the American Society of Mechanical Engineers Code requirements. The staff also gives specific guidance on relief acceptable to the NRC and advises licensees in the use of this information for application at their facilities. The staff discusses the revised standard technical specifications for the inservice testing program requirements and gives guidance on the process a licensee may follow upon finding an instance of non-compliance with the Code.

**NUREG-1525: ASSESSMENT OF THE NRC ENFORCEMENT PROGRAM.** LIEBERMAN, J. Ofc of Enforcement (Post 870413). COBLENTZ, L. Walnut Creek Field Ofc, R4 (Post 940404). April 1995. 200pp. 9505040381. 83784.001.

On May 13, 1994, the Nuclear Regulatory Commission's (NRC's) Executive Director for Operations established a Review Team to Assess the NRC Enforcement Program. The team evaluated the current system, and solicited comments from various NRC Offices, other Federal agencies, members of industry, and the public. This report presents the team's assessment. The report summarizes current processes and suggests certain changes. It proposes: (1) increased clarity, focus, and simplicity in the enforcement program; (2) retention of four severity levels of violations, with a clear focus on safety; (3) holding enforcement conferences only when needed, clarifying their status as predecisional, and making open conferences the norm; (4) a streamlined civil penalty assessment process, with fewer decisional points and limited outcomes, and the use of discretion where appropriate; and (5) implementation changes to increase efficiency. Recommendations are given in each area.

**NUREG-1526: LESSONS LEARNED FROM EARLY IMPLEMENTATION OF THE MAINTENANCE RULE AT NINE NUCLEAR POWER PLANTS.** PETRONE, C.D.; CORREIA, R.P.; BLACK, S.C. Office of Nuclear Reactor Regulation (Post 941001). June 1995. 44pp. 9507060341. 84532.001.

This report summarizes the lessons learned from the nine pilot site visits that were performed to review early implementation of the maintenance rule using the draft NRC Maintenance Inspection Procedure. Licensees followed NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." In general, the licensees were thorough in determining which structures, systems, and components (SSCs) were within the scope of the maintenance rule at each site. The use of an expert panel was an appropriate and practical method of determining which SSCs are risk significant. When setting goals, all licensees considered safety but many licensees did not consider operating experience throughout the industry. Although required to do so, licensees were not monitoring at the system or train level the performance or condition for some systems used in standby service but not significant to risk. Most licensees had not established adequate monitoring of structures under the rule. Licensees established reasonable plans for doing periodic evaluations, balancing unavailability and reliability, and assessing the effect of taking equipment out of service for maintenance. However, these plans were not evaluated because they had not been fully implemented at the time of the site visits.

**NUREG-1527: NRC'S OBJECT-ORIENTED SIMULATOR INSTRUCTOR STATION.** GRIFFIN, J.I.; GRIFFIN, J.P. Technical Training Center. June 1995. 107pp. 9506280427. 84469.073.

As part of a comprehensive simulator upgrade program, the simulator computer systems associated with the Nuclear Regulatory Commission's (NRC) nuclear power plant simulators were replaced. Because the original instructor stations for two of the simulators were dependent on the original computer equipment, it was necessary to develop and implement new instructor stations. This report describes the Macintosh-based Instructor Sta-

tions developed by NRC engineers for the General Electric (GE) and Babcock and Wilcox (B&W) simulators.

**NUREG/CP-0140 V01: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.** Plenary Session, Advanced Instrumentation & Control Hardware & Software, Human Factors Research, IPE & PRA. MONTELEONE, S. Brookhaven National Laboratory. April 1995. 403pp. 9505230106. 84016.001.

This three-volume report contains papers presented at the Twenty-Second Water Reactor Safety Information Meeting held at the Bethesda Marriott Hotel, Bethesda, Maryland, during the week of October 24-26, 1994. The papers are printed in the order of their presentation in each session and describe progress and results of programs in nuclear safety research conducted in this country and abroad. Foreign participation in the meeting included papers presented by researchers from Finland, France, Italy, Japan, Russia and United Kingdom. The titles of the papers and the names of the authors have been updated and may differ from those that appeared in the final program of the meeting.

**NUREG/CP-0140 V02: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.** Severe Accident Research, Thermal Hydraulic Research For Advanced Passive LWRs, High-Burnup Fuel Behavior. MONTELEONE, S. Brookhaven National Laboratory. April 1995. 430pp. 9505230109. 84018.001.

See NUREG/CP-0140, V01 abstract.

**NUREG/CP-0140 V03: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.** Primary Systems Integrity, Structural And Seismic Engineering, Aging Research, Products And Applications. MONTELEONE, S. Brookhaven National Laboratory. April 1995. 265pp. 9505230115. 84019.068.

See NUREG/CP-0140, V01 abstract.

**NUREG/CR-0200 V1 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION.** Control Modules. PARKS, C.V. Oak Ridge National Laboratory. April 1995. 781pp. 9506010500. ORNL/NUREG/CSD2. 84122.213.

SCALE—a modular code system for Standardized Computer Analyses for Licensing Evaluation—has been developed by Oak Ridge National Laboratory at the request of the U.S. Nuclear Regulatory Commission. The SCALE system utilizes well-established computer codes and methods within standard analysis sequences that (1) allow an input format designed for the occasional user and/or novice, (2) automate the data processing and coupling between modules, and (3) provide accurate and reliable results. System development has been directed at problem-dependent cross-section processing and analysis of criticality safety, shielding, heat transfer, and depletion/decay problems. Since the initial release of SCALE in 1980, the code system has been heavily used for evaluation of nuclear fuel facility and package designs. This revision documents Version 4.2 of the system.

**NUREG/CR-0200 V2P1R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION.** Functional Modules F1-F8. PARKS, C.V. Oak Ridge National Laboratory. April 1995. 670pp. 9506010509. ORNL/NUREG/CSD2. 84124.266.

See NUREG/CR-0200, V01, R04 abstract.

**NUREG/CR-0200 V2P2R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION.** Functional Modules F9-F16. PARKS, C.V. Oak Ridge National Laboratory. April 1995. 869pp. 9506010521. ORNL/NUREG/CSD2. 84128.273.

See NUREG/CR-0200, V01, R04 abstract.

**NUREG/CR-0200 V3 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION.** Miscellaneous. PARKS,C.V. Oak Ridge National Laboratory. April 1995. 793pp. 9506010519. ORNL/NUREG/CSD2. 84126:208.

See NUREG/CR-0200,V01,R04 abstract.

**NUREG/CR-2850 V13: DOSE COMMITMENTS DUE TO RADIOACTIVE RELEASES FROM NUCLEAR POWER PLANT SITES** 1991. BAKER,D.A. Battelle Memorial Institute, Pacific Northwest Laboratory. April 1995. 192pp. 9505090280. PNL-4221. 83849:001.

Population and individual radiation dose commitments have been estimated from reported radionuclide releases from commercial power reactors operating during 1991. Fifty-year dose commitments for a one-year exposure from both liquid and atmospheric releases were calculated for four population groups (infant, child, teenager, and adult) residing between 2 and 80 km from each of 72 reactor sites. This report tabulates the results of these calculations, showing the dose commitments for both water and airborne pathways for each age group and organ. Also included for each of the sites is an estimate of individual doses that are compared with 10 CFR Part 50, Appendix I design objectives. The total collective dose commitments (from both liquid and airborne pathways) for each site ranged from a high of 22 person-rem to a low of 0.002 person-rem for the sites with plants in operation and producing power during the year. The arithmetic mean was 1.2 person-rem. The total population dose for all sites was estimated at 88 person-rem for the 130 million people considered at risk. The individual dose commitments estimated for all sites below the Appendix I design objectives.

**NUREG/CR-3469 V08: OCCUPATIONAL DOSE REDUCTION AT NUCLEAR POWER PLANTS: ANNOTATED BIBLIOGRAPHY OF SELECTED READINGS IN RADIATION PROTECTION AND ALARA.** SULLIVAN,S.G.; KHAN,T.A.; XIE,J.W. Brookhaven National Laboratory. May 1995. 78pp. 9506140072. BNL-NUREG-51708. 84297:202.

The ALARA Center at Brookhaven National Laboratory publishes a series of bibliographies of selected readings in radiation protection and ALARA in a continuing effort to collect and disseminate information on radiation dose reduction at nuclear power plants. This is volume 8 of the series. The abstracts in this bibliography were selected from proceedings of technical meetings and conference journals, research reports, and searches of the Energy Science and Technology database of the U.S. Department of Energy. The subject material of these abstracts relates to the many aspects of radiation protection and dose reduction, and ranges from use of robotics, to operational health physics, to water chemistry. Material on the design, planning, and management of nuclear power stations is included, as well as information on decommissioning and safe storage efforts. Volume 8 contains 232 abstracts, an author index, and a subject index. The author index is specific for this volume. The subject index is cumulative and lists all abstract numbers from volumes 1 to 8. The numbers in boldface indicate the abstracts in this volume; the numbers not in boldface represent abstracts in previous volumes.

**NUREG/CR-4219 V10 N2: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM.** Semiannual Progress Report For April-September 1993. PENNELL,W.E. Oak Ridge National Laboratory. May 1995. 159pp. 9506140082. ORNL/TM-9593. 84299:001.

The Heavy-Section Steel Technology (HSST) Program is conducted for the Nuclear Regulatory Commission by Oak Ridge National Laboratory (ORNL). The program focuses on the development and validation of technology for the assessment of fracture-prevention margins in commercial nuclear reactor pressure vessels. The HSST Program is organized in 12 tasks: (1) program management, (2) fracture methodology and analysis, (3) material characterizations and properties, (4) special technical assistance, (5) fracture analysis computer programs, (6)

cleavage-crack initiation, (7) cladding evaluations, (8) pressurized-thermal-shock technology, (9) analysis methods validation, (10) fracture evaluation tests, (11) warm prestressing, and (12) biaxial loading effects on fracture toughness. The program tasks have been structured to emphasize the resolution fracture issues with near-term licensing significance. Resources to execute the research tasks are drawn from ORNL with subcontract support from universities and other research laboratories. Close contact is maintained with the sister Heavy-Section Steel Irradiation Program at ORNL and with related research programs both in the United States and abroad. This report provides an overview of principal developments in each of the 12 program tasks from April - September 1993.

**NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS.** Seventh Program Report March 1993 - December 1994. WILKOWSKI,G.M.; GHADIALI,N.; RUDLAND,D.; et al. Battelle Memorial Institute, Columbus Laboratories. April 1995. 74pp. 9505180445. BMI-2173. 83967:074.

This is the seventh progress report of the U.S. Nuclear Regulatory Commission's research program entitled "Short Cracks in Piping and Piping Welds." The program objective is to verify and improve fracture analyses for circumferentially cracked large-diameter nuclear piping with crack sizes typically used in leak-before-break (LBB) analyses and in-service flaw evaluations. All work in the eight technical tasks have been completed. Ten topical reports are scheduled to be published. Progress only during the reporting period, March 1993 - December 1994, not covered in the topical reports is presented in this report. Details about the following efforts are covered in this report: Improvements to the two computer programs NRCPIPE and NRCPIPES to assess the failure behavior of circumferential through-wall and surface-cracked pipe, respectively; Pipe material property database PIFRAC; Circumferentially cracked pipe database CIRCUMCK.WK1; An assessment of the proposed ASME Section III design stress rule changes on pipe flaw tolerance; and A pipe fracture experiment on a section of pipe removed from service degraded by microbiologically induced corrosion (MIC) which contained a girth weld crack. Progress in the other tasks is not repeated here as it has been covered in great detail in the topical reports.

**NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS.** Progress Report Of Field Experiments At A Humid Region Site,Beltsville,Maryland. SCHULZ,R.K. California, Univ. of, Los Angeles, CA. RIDKY,R.W. Maryland, Univ. of, College Park, MD. O'DONNELLE,E. Waste Management Branch (Post 941217). April 1995. 33pp. 9505030447. 83725:281.

The project objective is to assess means for controlling waste infiltration through waste disposal unit covers in humid regions. Experimental work is being performed in large scale lysimeters (70'x45'x10') at Beltsville, MD and results of the assessment are applicable to disposal of LLW, uranium mill tailings, hazardous waste, and sanitary landfills. Three concepts are under investigation: (1) resistive layer barrier, (2) conductive layer barrier, and (3) bioengineering water management. The resistive layer barrier consists of compacted earth (clay). The conductive layer barrier is a special case of the capillary barrier and it requires a flow layer (e.g. fine sandy loam) over a capillary break. As long as unsaturated conditions are maintained water is conducted by the flow layer to below the waste. This barrier is most efficient at low flow rates and is thus best placed below a resistive layer barrier. Such a combination of the resistive layer over the conductive layer barrier promises to be highly effective provided there is no appreciable subsidence. Bioengineering water management is a surface cover that is designed to accommodate subsidence. It consists of impermeable panels which enhance run-off and limit infiltration. Vegetation is planted in narrow openings between panels to transpire water from below the panels. This system has successfully dewatered two lysimeters thus demonstrating that this procedure could be used

for remedial action ("drying out") existing water-logged disposal sites at low cost.

**NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994.** Annual Report. MCCONNELL, J.W.; ROGERS, R.D.; JASTROW, J.D.; et al. Idaho National Engineering Laboratory. May 1995. 74pp. 9506140086. INEL-94/0278. 84298-232.

The Field Lysimeter Investigations: Low-Level Waste Data Base Development Program, funded by the U.S. Nuclear Regulatory Commission, is (a) studying the degradation effects in EPICOR-II organic ion-exchange resins caused by radiation, (b) examining the adequacy of the procedures recommended in the Branch Technical Position on Waste Form to meet the requirements of 10 CFR 61 using solidified EPICOR-II ion-exchange resins in a disposal environment, and (d) determining the condition of EPICOR-II liners. Compressive test results of 11-year-old cement and vinyl ester-styrene solidified waste forms are presented, which show effects of aging and self-irradiation. Results of the ninth year of data acquisition from the field testing are presented and discussed. During the continuing field testing, both Portland type I-II cement and Dow vinyl ester-styrene waste forms are being tested in lysimeter arrays located at Argonne National Laboratory-East in Illinois and at Oak Ridge National Laboratory. The study is designed to provide continuous data on nuclide release and movement, as well as environmental conditions, over a 20-year period.

**NUREG/CR-5591 V05 N1: HEAVY-SECTION STEEL IRRADIATION PROGRAM.** Semiannual Progress Report For September 1993 Through March 1994. CORWIN, W.R. Oak Ridge National Laboratory. April 1995. 71pp. 9505190052. ORNL/TM-11568. 83981-267.

The goal of the Heavy-Section Steel Irradiation Program is to provide a thorough, quantitative assessment of effects of neutron irradiation on material behavior, and in particular the fracture toughness properties, of typical pressure vessel steels as they relate to light-water reactor pressure-vessel integrity. Effects of specimen size, material chemistry, product form and microstructure, irradiation fluence, flux, temperature and spectrum, and post-irradiation annealing are being examined on a wide range of fracture properties. The HSSI Program is arranged into 14 tasks: (1) program management, (2) fracture toughness (K(Ic)) curve shift in high-copper welds, (3) crack-arrest toughness (K(Ia)) curve shift in high-copper welds, (4) irradiation effects on cladding, (5) K(Ic) and K(Ia) curve shifts in low upper-shelf welds, (6) annealing effects in low upper-shelf welds, (7) irradiation effects in a commercial low upper-shelf weld, (8) microstructural analysis of irradiation effects, (9) in-service aged material evaluations, (10) correlation monitor materials, (11) special technical assistance, (12) JPDR steel examination, (13) technical assistance for JCCNRS Working Groups 3 and 12, and (14) additional requirements for materials. This report provides an overview of the activities within each of these tasks from September 1993 through March 1994.

**NUREG/CR-5657: AUTOCASK (AUTOMATIC GENERATION OF 3-D CASK MODELS).** A Microcomputer Based System For Shipping Cask Design Review Analysis. GERHARD, M.A.; SOMMER, S.C. Lawrence Livermore National Laboratory. April 1995. 130pp. 9505180397. UCRL-ID-118766. 83967-231.

AUTOCASK (Automatic Generation of 3-D CASK Models) is a microcomputer-based system of computer programs and databases developed at the Lawrence Livermore National Laboratory for the structural analysis of shipping casks for radioactive material. Model specification is performed on the microcomputer, and the analyses are performed on the engineering workstation or mainframe computer. AUTOCASK is based on IBM-compatible microcomputers. The system is composed of a series of menus, input programs, display programs, a report generation program, and archive programs. All data is entered

through fill-in-the-blank input screens that contain descriptive data requests.

**NUREG/CR-5857: AGING OF TURBINE DRIVES FOR SAFETY-RELATED PUMPS IN NUCLEAR POWER PLANTS.** COX, D.F. Oak Ridge National Laboratory. June 1995. 64pp. 9507120251. ORNL-6713. 84634-295.

This study examines the relationship between aging, and current industry practices in areas of maintenance, surveillance, and operation of steam turbine drives for safety related pumps. These pumps are located in the Auxiliary Feedwater (AFW) system for pressurized water reactor plants, and the Reactor Core Isolation Cooling and High Pressure Coolant Injection systems for Boiling Water Reactor facilities. Findings in a recent study on the AFW (NUREG/CR-5404) indicate that the turbine drive is the single largest contributor to AFW system degradation. However, examination of the data show that the turbine itself is a reliable piece of equipment with a good service record. Most of the problems documented are the result of problems with the turbine controls and the mechanical overspeed trip mechanism, which apparently stem from three major causes.

**NUREG/CR-5954: EFFECT ON AGING ON PWR CHEMICAL AND VOLUME CONTROL SYSTEM.** GROVE, E.J.; TRAVIS, R.J. Brookhaven National Laboratory. June 1995. 196pp. 9507060335. BNL-NUREG-52410. 84532-181.

The effect of aging on the PWR Chemical and Volume Control System (CVCS) has been evaluated. A detailed review of the NPRDS and LER databases for the 1988-1991 time period, together with a review of industry and NRC experience and research, indicate that age-related degradations and failures have occurred. These failures had significant effects on plant operation, including reactivity excursions, and pressurizer level transients. The majority of these component failures resulted in leakage of reactor coolant outside the containment. A representative plant of each PWR NSSS design (W, CE, and B&S) was visited to obtain specific information on system inspection, surveillance, monitoring, and inspection practices. The results of these visits indicate that adequate system maintenance and inspection is being performed. In some instances, the frequencies of inspection were increased in response to repeated failure events. A parametric study was performed to assess the effect of system aging on Core Damage Frequency (CDF). This study showed that as MOV operating failures increased the contribution of the High Pressure Injection to CDF also increased.

**NUREG/CR-5975 R01: INCENTIVE REGULATION OF INVESTOR-OWNED NUCLEAR POWER PLANTS BY PUBLIC UTILITY REGULATORS.** MCKINNEY, M.D.; SEELY, H.E.; MERRITT, C.R.; et al. Battelle Memorial Institute, Pacific Northwest Laboratory. April 1995. 70pp. 9505180354. PNL-8466. 83967-001.

The U.S. Nuclear Regulatory Commission (NRC) periodically surveys utilities that operate nuclear plants and state regulatory commissions that regulate utility owners of nuclear power plants. The NRC is interested in identifying states that have established economic or performance incentive programs applicable to nuclear power plants, including states with new programs, how the programs are being implemented, and in determining the financial impact of the programs on the utilities. The NRC interest stems from the fact that such programs have the potential to adversely affect the safety of nuclear power plants. The information in this report was obtained from interviews conducted with each state regulatory agency that administers an incentive program and each utility that owns at least 10% of an affected nuclear power plant. The agreements, orders, and settlements, that form the basis for each incentive program were reviewed as required. The interviews and supporting documentation form the basis for the individual state reports describing the structure and financial impact of each incentive program.

**NUREG/CR-6004:** PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS. RAHMAN, S.; GHADIALI, N.; PAUL, D.; et al. Battelle Memorial Institute, Columbus Laboratories. April 1995. 336pp. 9505090276. BMI-2174. 83848:001.

Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," was published by the U.S. Nuclear Regulatory Commission (NRC) in May 1973, and provides guidance on leak detection methods and system requirements for Light Water Reactors. Additionally, leak detection limits are specified in plant Technical Specifications and are different for Boiling Water Reactors (BWRs) and Pressurized Water Reactors (PWRs). These leak detection limits are also used in leak-before-break evaluations performed in accordance with Draft Standard Review Plan, Section 3.6.3, "Leak Before Break Evaluation Procedures" where a margin of 10 on the leak detection limit is used in determining the crack size considered in subsequent fracture analyses. This study was requested by the NRC to: (1) evaluate the conditional failure probability for BWR and PWR piping for pipes that were leaking at the allowable leak detection limit, and (2) evaluate the margin of 10 to determine if it was unnecessarily large. A probabilistic approach was undertaken to conduct fracture evaluations of circumferentially cracked pipes for leak-rate-detection applications. Sixteen nuclear piping systems in BWR and PWR plants were analyzed to evaluate conditional failure probability and effects of crack-morphology variability on the current margins used in leak rate detection for leak-before-break.

**NUREG/CR-6016:** AGING AND SERVICE WEAR OF AIR-OPERATED VALVES USED IN SAFETY-RELATED SYSTEMS AT NUCLEAR POWER PLANTS. COX, D.F.; MCELHANEY, K.L.; STAUNTON, R.H. Oak Ridge National Laboratory. May 1995. 62pp. 9506140092. ORNL/TM-6789. 84299:152.

Air-operated valves (AOVs) are used in a variety of safety-related applications at nuclear power plants. They are often used where rapid stroke times are required or precise control of the valve obturator is required. They can be designed to operate automatically upon loss of power, which is often desirable when selecting components for response to design basis conditions. The purpose of this report is to examine the reported failures of AOVs and determine whether there are identifiable trends in the failures related to predictable causes. This report examines the specific components that comprise a typical AOV, how those components fail, when they fail, and how such failures are discovered. It also examines whether current testing frequencies and methods are effective in predicting such failures.

**NUREG/CR-6046:** ALERTNESS, PERFORMANCE, AND OFF-DUTY SLEEP ON 8-HOUR AND 12-HOUR NIGHT SHIFTS IN A SIMULATED CONTINUOUS OPERATIONS CONTROL ROOM SETTING. BAKER, T.L. Institute for Circadian Physiology. April 1995. 157pp. 9505030466. 83745:228.

This study of simulated 8-hour and 12-hour work shifts compares alertness, speed, and accuracy of subjects assigned to the two shift conditions. Twenty male subjects, ages 20 to 45, were randomly assigned to either an 8-hour or 12-hour shift protocol, working in teams of two in a process control simulator. In addition to the simulator monitoring task, subjects completed a 15-minute performance assessment battery and a vigor and affect scale hourly. Throughout the simulated work shift, alertness was monitored by recording electroencephalogram (EEG), electrooculogram (EOG) and electromyogram (EMG) data. At 2-hour intervals, subjects' sleepiness-alertness level was assessed via standardized tests. During off-shift hours, subjects lived in attached, self-contained apartments. Subjects were restricted to bed for an 8-hour sleep period in total darkness one-hour after work shifts; EEG, EOG, AND EMG recordings were continued during sleep. During days off between blocks of shifts, subjects left the facility, but kept detailed logs of sleep-wake activities. No significant differences were found between subjects on 8-hour and 12-hour night shifts in performance on the simulator task, in length or quality of daytime sleep,

or in physiological or subjective sleepiness-alertness on shift. Except for one subtest in the performance test battery, subjects on 12-hour shifts were slower, but more accurate, than those on 8-hour shifts. Several measures showed better alertness, mood, and off-duty sleep on evening shifts than on night shifts.

**NUREG/CR-6109:** THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY. PILCH, M.M.; ALLEN, M.D. Sandia National Laboratories. SPENCER, B.W.; et al. Argonne National Laboratory. May 1995. 275pp. 9506010485. SAND93-2078. 84121:302.

This report uses the methodology and scenarios described in NUREG/CR-6075 and its supplement to address the direct containment heating (DCH) issue for the Surry nuclear power plant (NPP). Consistency of the initial distributions has been ensured by using insights from system-level codes, specifically SCDAP/RELAP5 and CONTAIN. The most useful insights are that the reactor coolant system (RCS) pressure is low at vessel breach, metallic blockages in the core region do not melt and relocate into the lower plenum, and melting of upper plenum steel is correlated with hot leg failure. The SCDAP/RELAP5 output was used as input to CONTAIN to assess the containment conditions at vessel breach. The load evaluations for Surry showed no intersections of the load distributions with the containment strength distribution, and thus the DCH issue for Surry can be resolved based on containment loads alone. However, the likelihood of high RCS pressures at vessel breach was evaluated for Surry for a limited number of sequences. The probability of RCS pressures greater than 1.38 MPa for all station blackout scenarios without power recovery or operator intervention was found to be low (0.077). This probability could have been factored into the containment failure probability for Surry if there had been intersection of the load and strength distributions.

**NUREG/CR-6112:** IMPACT OF REDUCED DOSE LIMITS ON NRC LICENSED ACTIVITIES. Major Issues In The Implementation Of ICRP/NCRP Dose Limit Recommendations. Final Report. MEINHOLD, C.B. Brookhaven National Laboratory. May 1995. 79pp. 9505230093. BNL/NUREG-52394. 84017:240.

This report summarizes information required to estimate, at least qualitatively, the potential impacts of reducing occupational dose limits below those given in 10 CFR 20 (Revised). The following overall conclusions were reached: (1) Although 10 mSv yr<sup>-1</sup> is a reasonable limit for many licensees, such a limit could be extraordinarily difficult to achieve and potentially destructive to the continued operation of some licensees, such as nuclear power, fuel fabrication, and medicine. (2) Twenty mSv yr<sup>-1</sup> as a limit is possible for some of these groups, but for others it would prove difficult. (3) Fifty mSv yr<sup>-1</sup> and age in 10s of mSv appear reasonable for all licensees, both in terms of the lifetime risk of cancer and severe genetic effects to the most highly exposed workers, and the practicality of operation. In some segments of the industry, this acceptability is based on the adoption of a "grandfather clause" for those people exceeding or close to exceeding the cumulative limit at this time.

**NUREG/CR-6114 V02:** AUXILIARY ANALYSES IN SUPPORT OF PERFORMANCE ASSESSMENT OF A HYPOTHETICAL LOW-LEVEL WASTE FACILITY. Two-Phase Flow And Contaminant Transport In Unsaturated Soils With Application To Low-Level Radioactive Waste Disposal. BINNING, P.; CELIA, M.A.; JOHNSON, J.C. Princeton Univ., Princeton, NJ. May 1995. 139pp. 9506140130. 84299:214.

A numerical model of multiphase air-water flow and contaminant transport in the unsaturated zone is presented. The multiphase flow equations are solved using the two-pressure, mixed form of the equations with a modified Picard linearization of the equations and a finite element spatial approximation. A volatile contaminant is assumed to be transported in either phase, or in both phases simultaneously. The contaminant partitions between phases with an equilibrium distribution given by Henry's Law or via kinetic mass transfer. The transport equations are



solved using a Galerkin finite element method with reduced integration to lump the resultant matrices. The numerical model is applied to published experimental studies to examine the behavior of the air phase and associated contaminant movement under water infiltration. The model is also used to evaluate a hypothetical design for a low-level radioactive waste disposal facility. The model has been developed in both one and two dimensions; documentation and computer codes are available for the one-dimensional flow and transport model.

**NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPHIRE) VERSION 5.0.** Data Loading Manual. VANHORN, R.L.; WOLFRAM, L.M.; FOWLER, R.D.; et al. Idaho National Engineering Laboratory. April 1995. 161 p. 9505180347. INEL-94/0039. 83966:120.

The Systems Analysis Programs for the Hands-on Integrated Reliability Evaluations (SAPHIRE) suite of programs can be used to organize and standardize in an electronic format information from probabilistic risk assessments or individual plant examinations. The Models and Results Database (MAR-D) program of the SAPHIRE suite serves as the repository for probabilistic risk assessment and individual plant examination data and information. This report demonstrates by examples the common electronic and manual methods used to load these types of data. It is not a stand alone document but references documents that contribute information relative to the data loading process. This document provides a more detailed discussion and instructions for using SAPHIRE 5.0 only when enough information on a specific topic is not provided by another available source.

**NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS.** Primer And User's Guides. Version 1.8.3 September 1994. SUMMERS, R.M.; COLE, R.K.; SMITH, R.C.; et al. Sandia National Laboratories. March 1995. 708pp. 9505040396. SAND93-2185. 83779:001.

MELCOR is a fully integrated, engineering-level computer code that models the progression of severe accidents in light water reactor nuclear power plants. MELCOR is being developed at Sandia National Laboratories for the U.S. Nuclear Regulatory Commission as a second-generation plant risk assessment tool and the successor to the Source Term Code Package. A broad spectrum of severe accident phenomena in both boiling and pressurized water reactors is treated in MELCOR in a unified framework. These include: thermal-hydraulic response in the reactor coolant system, reactor cavity, containment, and confinement buildings; core heatup, degradation, and relocation; core-concrete attack; hydrogen production, transport, and combustion; fission product release and transport; and the impact of engineered safety features on thermal-hydraulic and radionuclide behavior. Current uses of MELCOR include estimation of severe accident source terms and their sensitivities and uncertainties in a variety of applications.

**NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS.** Reference Manuals. Version 1.8.3 September 1994. SUMMERS, R.M.; COLE, R.K.; SMITH, R.C. Sandia National Laboratories. March 1995. 865pp. 9505040402. SAND93-2185. 83781:001.

See NUREG/CR-6119, V01 abstract.

**NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY.** Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance. CALLAN, J.R.; KELLY, R.T.; QUINN, M.L.; et al. Pacific Science & Engineering Group, Inc. May 1995. 205pp. 9506140119. 84300:001.

Remote Afterloading Brachytherapy (RAB) is a medical process used in the treatment of cancer. RAB uses a computer-controlled device to remotely insert and remove radioactive sources close to a target (or tumor) in the body. Some RAB problems affecting the radiation dose to the patient have been reported and attributed to human error. To determine the root cause of

human error in the RAB system, a human factors team visited 23 RAB treatment sites in the U.S. The team observed RAB treatment planning and delivery, interviewed RAB personnel, and performed walk-throughs, during which staff demonstrated the procedures and practices used in performing RAB tasks. Factors leading to human error in the RAB system were identified. The impact of those factors on the performance of RAB was then evaluated and prioritized in terms of safety significance. Finally, the project identified and evaluated alternative approaches for resolving the safety significant problems related to human error.

**NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY.** Function And Task Analysis. CALLAN, J.R.; GWYNNE, J.W.; KELLY, R.T.; et al. Pacific Science & Engineering Group, Inc. May 1995. 143pp. 9506140126. 84300:207.

A human factors project on the use of nuclear by-product material to treat cancer using remotely operated afterloaders was undertaken by the Nuclear Regulatory Commission. The purpose of the project was to identify factors that contribute to human error in the system for remote afterloading brachytherapy (RAB). This report documents the findings from the first phase of the project, which involved an extensive function and task analysis of RAB. This analysis identified the functions and tasks in RAB, made preliminary estimates of the likelihood of human error in each task, and determined the skills needed to perform each RAB task. The findings of the function and task analysis served as the foundation for the remainder of the project, which evaluated four major aspects of the RAB system linked to human error: human-system interfaces; procedures and practices; training and qualifications of RAB staff; and organizational practices and policies. At its completion, the project identified and prioritized areas for recommended NRC and industry attention based on all of the evaluations and analyses.

**NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUT-DOWN OPERATIONS AT SURRY, UNIT 1.** Evaluation Of Severe Accident Risk During Mid-Loop Operations. Main Report. JO, J.; LIN, C.C.; NEYMOTIN, L.; et al. Brookhaven National Laboratory. May 1995. 145pp. 9506220089. BNL-NUREG-52399. 84394:192.

This document contains the accident progression analysis of internally initiated events for Surry, Unit 1 as it operates in mid-loop operation during drained maintenance or a refueling outage. The report documents the methodology used during the analysis, describes the results from the application of the methodology, and compares the results with the results from a full power analysis performed on Surry as a part of the Nureg-1150 study.

**NUREG/CR-6144 V06 P2: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUT-DOWN OPERATIONS AT SURRY, UNIT 1.** Evaluation Of Severe Accident Risk During Mid-Loop Operations. Appendices. JO, J.; LIN, C.C.; NEYMOTIN, L.; et al. Brookhaven National Laboratory. May 1995. 275pp. 9507120287. BNL-NUREG-52399. 84633:084.

See NUREG/CR-6144, V06, P1 abstract.

**NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES.** Experiments And Analysis. March 1990 - December 1994. BRUST, F.W.; SCOTT, P.; RAHMAN, S.; et al. Battelle Memorial Institute, Columbus Laboratories. April 1995. 249pp. 9505040365. BMI-2179. 83784:190.

This topical report summarizes the work performed for the Nuclear Regulatory Commission's (NRC) research program entitled "Short Cracks in Piping and Piping Welds" that specifically focuses on pipes with short through-wall cracks. Previous NRC efforts, conducted under the Degraded Piping Program, focused on understanding the fracture behavior of larger cracks in piping

## 10 Main Citations and Abstracts

and fundamental fracture mechanics developments necessary for this technology. This report gives details on: (i) material property determinations (ii) pipe fracture experiments, and (iii) development, modification, and validation of fracture analysis methods. The material property data required to analyze the experimental results are included. These data were also implemented into the NRC's PIRFAC database. Three pipe experiments with short through-wall cracks were conducted on large diameter pipe. Also, experiments were conducted on a large-diameter uncracked pipe and a pipe with a moderate-size through-wall crack. The analysis results reported here focus on simple predictive methods based on the J-Tearing theory as well as limit-load and ASME Section XI analyses. Some of these methods were improved for short-crack-length predictions. The accuracy of the various methods was determined by comparisons with experimental results from this and other programs.

**NUREG/CR-6251: STAINLESS STEEL SUBMERGED ARC WELD FUSION LINE TOUGHNESS.** ROSENFELD, A.R.; HELD, P.R.; WILKOWSKI, G.M. Battelle Memorial Institute, Columbus Laboratories. April 1995. 88pp. 9505190023. BMI-2180. 83980:197.

This effort evaluated the fracture toughness of austenitic steel submerged-arc weld (SAW) fusion lines. The incentive was to explain why cracks grow into the fusion line in many pipe tests conducted with cracks initially centered in SAWs. The concern was that the fusion line may have a lower toughness than the SAW. It was found that the fusion line,  $J(Ic)$  was greater than the SAW toughness but much less than the base metal. Of greater importance may be that the crack growth resistance ( $J(D)-R$ ) of the fusion line appeared to reach a steady-state value, while the SAW had a continually increasing  $J(D)-R$  curve. This explains why the cracks eventually turn to the fusion line in the pipe experiments. A method of incorporating these results would be to use the weld metal  $J-R$  curve up to the fusion-line steady-state  $J$  value. These results may be more important to LBB analyses than the ASME flaw evaluation procedures, since there is more crack growth with through-wall cracks in LBB analyses than for surface cracks in pipe flaw evaluations.

**NUREG/CR-6256 V01: FIELD LYSIMETER INVESTIGATIONS - TEST RESULTS.** Low-Level Waste Data Base Program, Test Results For Fiscal Years 1986, 1987, 1988, And 1989. MCCONNELL, J.W.; ROGERS, R.D.; FINDLAY, M.W.; et al. Idaho National Engineering Laboratory. May 1995. 134pp. 9506020457. INEL-95/0073. 84147:001.

The Field Lysimeter Investigations: Low-Level Waste Data Base Development Program, funded by the U.S. Nuclear Regulatory Commission (NRC), is (a) studying the degradation effects in EPICOR-II organic ion-exchange resins caused by radiation, (b) examining the adequacy of test procedures recommended in the Branch Technical Position on Waste Form to meet the requirements of 10 CFR 61 using solidified EPICOR-II resins, (c) obtaining performance information on solidified EPICOR-II ion-exchange resins in a disposal environment, and (d) determining the condition of EPICOR-II liners. Results of the first 4 years of data acquisition from the field testing are presented and discussed. During the continuing field testing, both Portland type I-II cement and Dow vinyl ester-styrene waste forms are being tested in lysimeter arrays located at Argonne National Laboratory-East in Illinois and at Oak Ridge National Laboratory. The experimental equipment is described and results of waste form characterization using tests recommended by the NRC's "Technical Position on Waste Form" are presented. The study is designed to provide continuous data on nuclide release and movement, as well as environmental conditions, over a 20-year period.

**NUREG/CR-6275: MECHANICAL PROPERTIES OF THERMALLY AGED CAST STAINLESS STEELS FROM SHIPPINGPORT REACTOR COMPONENTS.** CHOPRA, O.K.; SHACK, W.J. Argonne National Laboratory. April 1995. 170pp. 9506010453. ANL-94/37. 84121:001.

Thermal embrittlement of static-cast CF-8 stainless steel components from the decommissioned Shippingport reactor has been characterized. Cast stainless steel materials were obtained from four cold-leg check valves, three hot-leg main shut-off valves, and two pump volutes. The actual time-at-temperature for the materials was  $\approx 13$  y at  $\approx 281$  degrees C for the hot-leg components and  $\approx 264$  degrees C for the cold-leg components. Baseline mechanical properties for as-cast material were determined from tests on either recovery-annealed material or material from the cooler region of the component. The Shippingport materials show modest decreases in fracture toughness and Charpy-impact properties and a small increase in tensile strength because of relatively low service temperatures and ferrite content of the steel. The procedure and correlations developed at Argonne National Laboratory for estimating mechanical properties of cast stainless steels predict accurate or slightly lower values for Charpy-impact energy, tensile flow stress, fracture toughness  $J-R$  curve, and  $J(Ic)$  of the materials. The kinetics of thermal embrittlement and degree of embrittlement at saturation were established from materials that were aged further in the laboratory. The results were consistent with the estimates. The correlations successfully predicted the mechanical properties of the Ringhals 2 reactor hot- and cross-over-leg elbows (CF-8M) after service of  $\approx 15$  y and the KRB reactor pump cover plate (CF-8) after  $\approx 8$  y of service.

**NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.** OFOEGBU, G.I.; HSIUNG, S.-M.; CHOWDHURY, A.H.; et al. Center for Nuclear Waste Regulatory Analyses. April 1995. 103pp. 9505040377. CNWRA 94-017. 83783:158.

The results of a field investigation on the groundwater-hydrologic effect of mining-induced earthquakes are presented. The investigation was conducted at the Lucky Friday Mine Idaho, the groundwater pressure in three fracture zones was monitored over a 24-mo period. The magnitude, source location, and associated ground motions of mining-induced seismic events were also monitored. Several seismic events of magnitude 1.0 or larger were recorded, many of which caused a change in the groundwater pressure. The magnitude of groundwater-pressure change varied with the seismic-event magnitude and source distance. The data was examined using regression analysis. The statistical models obtained predicted the effects of small-magnitude seismic events more satisfactorily than those of larger ones. The observed change in groundwater pressure due to seismic events of magnitude 3.0 or more were larger than those predicted using the statistical model. Based on these results, it is suggested that the effect of earthquakes on groundwater flow may be better understood through mechanistic modeling. The mechanical processes and material behavior that would need to be incorporated in such a model are examined. They include a description of the effect of stress change on the permeability and water storage capacity of a fractured rock mass; transient fluid flow; and the generation and transmission of seismic waves through the rock mass.

**NUREG/CR-6287: MANAGEMENT CONCEPTS AND SAFETY APPLICATIONS FOR NUCLEAR FUEL FACILITIES.** EISNER, H.; SCOTT, R.S. George Washington Univ., Washington, DC. DELICATE, W.S. The KEVRIC Company, Inc. May 1995. 131pp. 9506020467. 84147:137.

This report presents an overview of effectiveness of management control of safety. It reviews several modern management control theories as well as the general functions of management and relates them to safety issues at the corporate and at the process safety management (PSM) program level. Following these discussions, a formal and structured technique for assessing management of the safety function is suggested. Seven modern management control theories are summarized, including business process reengineering, the learning organization, capability maturity, total quality management, quality assurance and control, reliability centered maintenance, and industrial process

safety. Each of these theories is examined for its principal characteristics and implications for safety management. The five general management functions of planning, organizing, directing, monitoring, and integrating, which together provide control over all company operations, are discussed. Under the broad categories of Safety Culture, Leadership and Commitment, and Operating Excellence, key corporate safety elements and their subelements are examined. The three categories under which PSM program-level safety issues are described are Technology, Personnel, and Facilities.

**NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.** SCOTT,P.; FRANCINI,R.; RAHMAN,S.; et al. Battelle Memorial Institute, Columbus Laboratories. April 1995. 111pp. 9505030455. BMI-2182. 83744:194.

In both BWRs and PWRs there are many locations where carbon steel pipe or components are joined to stainless steel pipe or components with a bimetallic weld. The objective of the research described in this report was to assess the accuracy of current fracture analyses for the case of a crack along a carbon steel to austenitic weld fusion line. To achieve the program objective, material property data and data from a large-diameter pipe fracture experiment were developed to assess current analytical methods. The bimetallic welds evaluated in this program were bimetallic welds obtained from a cancelled Combustion Engineering plant. The welds joined sections of the carbon steel cold-leg piping system to stainless steel safe ends that were to be welded to stainless steel pump housings. The major conclusion drawn as a result of these efforts was that the fracture behavior of the bimetallic weld evaluated in this program could be evaluated with reasonable accuracy using the strength and toughness properties of the carbon steel pipe material in conjunction with conventional elastic-plastic fracture mechanics or limit-load analyses. This may not be generally true for all bimetallic welds, as discussed in this report.

**NUREG/CR-6299: EFFECTS OF TOUGHNESS ANISOTROPY AND COMBINED TENSION, TORSION, AND BENDING LOADS ON FRACTURE BEHAVIOR OF FERRITIC NUCLEAR PIPE.** MOHAN,R.; MARSCHALL,C.W.; KRISHNASWAMY,P.; et al. Battelle Memorial Institute, Columbus Laboratories. April 1995. 122pp. 9506020484. 84147:268.

This topical report summarizes the work on angled crack growth and combined loading effects performed within the Nuclear Regulatory Commission's research program, entitled "Short Cracks in Piping and Piping Welds". The major impetus for this work stemmed from the observation that initial circumferential cracks in carbon steel pipes exhibited angular crack growth. This failure mode was little understood, and the effect of angled crack growth from an initially circumferential crack raised questions of how pipes under combined loading with torsional stresses would behave. There were three major conclusions from this work. The first was that virtually all ferritic nuclear pipes will have toughness anisotropy. The second was that the ratio of the normalized crack driving force (as a function of angle) to the normalized toughness (also as a function of the angle of crack growth) showed that there was an equal likelihood of cracks growing at any angle between 25 and 65 degrees. This agreed with the scatter of crack growth angles observed in pipe tests. Third, for combined loads with torsional stresses, an effective moment allows pure bending analyses to be used up to crack initiation. Crack opening area under combined loads could also be determined in this manner.

**NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.** RAHMAN,S.; BRUST,F.W.; GHADIALI,N.; et al. Battelle Memorial Institute, Columbus Laboratories. April 1995. 227pp. 9505030464. BMI-2184. 83745:001.

Leak-before-break (LBB) analyses for circumferentially cracked pipes are currently being conducted in the nuclear in-

dustry to justify elimination of pipe whip restraints and jet impingement shields which are present because of the expected dynamic effects from pipe rupture. The application of the LBB methodology frequently requires calculation of leak rates. The leak rates depend on the crack-opening area of the through-wall crack in the pipe. In addition to LBB analyses which assume a hypothetical flaw size, there is also interest in the integrity of actual leaking cracks corresponding to current leakage detection requirements in NRC Regulatory Guide 1.45, or for assessing temporary repair of Class 2 and 3 pipes that have leaks as are being evaluated in ASME Section XI. This study was requested by the NRC to review, evaluate, and refine current analytical models for crack-opening-area analyses of pipes with circumferential through-wall cracks. Twenty-five pipe experiments were analyzed to determine the accuracy of the predictive models. Several practical aspects of crack-opening such as: crack-face pressure, off-center cracks, restraint of pressure-induced bending, cracks in thickness transition regions, weld residual stresses, crack-morphology models, and thermal-hydraulic analysis, were also investigated.

**NUREG/CR-6307: SUMMARY OF COMMENTS RECEIVED AT WORKSHOP ON USE OF A SITE SPECIFIC ADVISORY BOARD (SSAB) TO FACILITATE PUBLIC PARTICIPATION IN DECOMMISSIONING CASES.** CAPLIN,J.; PAGE,G.; SMITH,D.; et al. Advanced Systems Technology, Inc. June 1995. 115pp. 9507120259. 84634:190.

The Nuclear Regulatory Commission (NRC) is conducting an enhanced participatory rulemaking to establish radiological criteria for the decommissioning of NRC-licensed facilities. As part of this rulemaking, on August 20, 1994 the NRC published a proposed rule for public comment. Paragraph 20.1406(b) of the proposed rule would require that the licensee convene a Site Specific Advisory Board (SSAB) if the licensee proposed release of the site for restricted use after decommissioning. To encourage comment the NRC held a workshop on the subject of SSABs on December 6, 7, and 8, 1994. This report summarizes the 567 comments categorized from the transcript of the workshop. The commenters at the workshop generally supported public participation in decommissioning cases. Many participants favored promulgating requirements in the NRC's rules. Some industry participants favored relying on voluntary exchanges between the public and the licensees. Many participants indicated that a SSAB or something functionally equivalent is needed in controversial decommissioning cases, but that some lesser undertaking can achieve meaningful public participation in other cases. No analysis or response to the comments is included in this report.

**NUREG/CR-6308: AN OVERVIEW OF INSTABILITY AND FINGERING DURING IMMISCIBLE FLUID FLOW IN POROUS AND FRACTURED MEDIA.** CHEN,G.; TANIGUCHI,M.; NEUMAN,S.P. Arizona, Univ. of, Tucson, AZ. April 1995. 137pp. 9507060331. 84532:043.

Wetting front instability is an important phenomenon affecting fluid flow and contaminant transport in unsaturated soils and rocks. It causes the development of fingers which travel faster than would a uniform front and thus bypass much of the medium. Water saturation and solute concentration in such fingers tend to be higher than in the surrounding medium. During infiltration, fingering may cause unexpectedly rapid arrival of water and solute at the water table. This notwithstanding, most models of subsurface flow and transport ignore instability and fingering. In this report, we survey the literature to assess the extent to which this may or may not be justified. Our overview covers experiments, theoretical studies, and computer simulations of instability and fingering during immiscible two-phase flow and transport, with emphasis on infiltration into soils and fractured rocks. Our description of instability in an ideal fracture (Hele-Shaw cell) includes an extension of existing theory to fractures and interfaces having arbitrary orientations in space. Our discussion of instability in porous media includes a slight

but important correction of existing theory for the case of an inclined interface. We conclude by outlining some potential directions for future research. Among these, we single out the effect of soil and rock heterogeneities on instability and preferential flow as meriting special attention in the context of nuclear waste storage in unsaturated media.

**NUREG/CR-6312:** ASSESSMENT OF FIBER OPTIC PRESSURE SENSORS. HASHEMIAN, H.M.; BLACK, C.L.; FARMER, J.P. Analysis & Measurement Services Corp. April 1995. 132pp. 9506010456. 84121:170.

The principle of operation of fiber optic pressure sensors and the potential of these sensors for use in nuclear power plants are described in this report. Also included is a review of current research on fiber optic sensing technologies, a comparison of fiber optic pressure sensors with conventional pressure sensors, a discussion on advantages and disadvantages of fiber optic pressure sensors, a review of failure modes of these sensors, and results of a survey of fiber optic sensor manufacturers.

**NUREG/CR-6315:** CANDU REACTORS, THEIR REGULATION IN CANADA, AND THE IDENTIFICATION OF RELEVANT NRC SAFETY ISSUES. CHARAK, I.; KIER, P.H. Argonne National Laboratory. April 1995. 48pp. 9505180578. ANL-95/5. 83980:034.

Atomic Energy of Canada, Limited (AECL) and its subsidiaries in the United States, are considering submitting the CANDU 3 design for standard design certification under 10 CFR Part 52. CANDU reactors are pressurized heavy water power reactors. They have some substantially different safety responses and safety systems than the LWRs that the commercial power reactor licensing regulations of the U.S. Nuclear Regulatory Commission (NRC) have been developed to deal with. In this report, the authors discuss the basic design characteristics of CANDU reactors, specifically of the CANDU 3 where possible, and some safety-related consequences of these characteristics. The authors also discuss the Canadian regulatory provisions, and the CANDU safety systems that have evolved to satisfy the Canadian regulatory requirements as of December 1992. Finally, the authors identify NRC regulations, mainly in 10 CFR Parts 50 and 100, with issues for CANDU 3 reactor designs. In all, eleven such regulatory issues are identified. They are: (1) the ATWS rule (Section 50.62); (2) station blackout (Section 50.63); (3) conformance with Standard Review Plan (SRP); (4) appropriateness of the source term (Section 50.34(f) & Section 100.11); (5) applicability of reactor coolant pressure boundary (RCPB) requirements (Section 50.55a, etc); (6) ECCS acceptance criteria (Section 50.46(b)); (7) combustible gas control (Section 50.44, etc); (8) power coefficient of reactivity (GDC 11); (9) seismic design (Part 100); (10) environmental impacts of the fuel cycle (Section 51.51); and (11) standards Section 50.55a).

**NUREG/CR-6318:** DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST VI-7. OSBORNE, M.F.; LORENZ, R.A.; TRAVIS, J.R.; et al. Oak Ridge National Laboratory. May 1995. 65pp. 9506220072. ORNL/TM-12937. 84394:001.

Test VI-7 was the final test in the VI series conducted in the vertical furnace. The fuel specimen was a 15.2-cm-long section of a fuel rod from the Monticello boiling water reactor (BWR). The fuel had experienced a burnup of ~40 Mwd/kg U. It was heated in an induction furnace for successive 20-min periods at 2000 and 2300 K in a moist air-helium atmosphere. Integral releases were 69% for <sup>85</sup>Kr, 52% for (<sup>125</sup>Sb), 71% for both (<sup>134</sup>Cs) and (<sup>137</sup>Cs), and 0.04% for (<sup>154</sup>Eu). For the non-gamma-emitting species, release values for I, 4.1% for Ba, 5.3% for Mo, and 1.2% for Sr were determined. The total mass released from the furnace to the collection system, including fission products, fuel, and structural materials, was 0.89 g, with 37% being collected on the thermal gradient tubes and 63% downstream on filters. Posttest examination of the fuel specimen indicated that most of the cladding was completely oxidized to ZrO<sub>2</sub>, but that oxidation was not quite complete at the upper end. The release behaviors for the most volatile ele-

ments, Kr and Cs, were in good agreement with the ORNL-Booth Model.

**NUREG/CR-6322:** BUCKLING ANALYSIS OF SPENT FUEL BASKET. LEE, A.S.; BUMPAS, S.E. Lawrence Livermore National Laboratory. May 1995. 60pp. 9505230342. UCRL-ID-119697. 84026:245.

The basket for a spent fuel shipping cask is subjected to compressive stresses that may cause global instability of the basket assemblies or local buckling of the individual members. Adopting the common buckling design practice in which the stability capacity of the entire structure is based on the performance of the individual members of the assemblies, the typical spent fuel basket, which is composed of plates and tubular structural members, can be idealized as an assemblage of columns, beam-columns and plates. This report presents the flexural buckling formulas for five load cases that are common in the basket buckling analysis: column under axial loads, column under axial and bending loads, plates under uniaxial loads, plates under biaxial loadings, and plate under biaxial loads and lateral pressure. The acceptance criteria from the ASME Boiler and Pressure Vessel Code are used to determine the adequacy of the basket components. Special acceptance criteria are proposed to address the unique material characteristics of austenitic stainless steel, a material which is frequently used in the basket assemblies.

**NUREG/CR-6327:** MODELS FOR EMBRITTLEMENT RECOVERY DUE TO ANNEALING OF REACTOR PRESSURE VESSEL STEELS. EASON, E.D.; WRIGHT, J.E.; NELSON, E.E.; et al. Modeling & Computer Services. May 1995. 76pp. 9505190018. MCS 950302. 83982:001.

The irradiation embrittlement of the reactor pressure vessel in nuclear power plants can be reduced by thermal annealing at temperatures higher than the normal operating conditions. The objective of this work was to analyze the pertinent data and develop quantitative models for estimating the recovery in 30 ft-lb (41 J) Charpy transition temperature and Charpy and Charpy upper shelf energy due to annealing. An analysis data base was developed, reviewed for completeness and accuracy, and documented as part of this work. Independent variables considered in the analysis included material chemistries, annealing time and temperature, irradiation time and temperature, fluence, and flux. To identify important variables and functional forms for predicting embrittlement recovery, pattern recognition, transformation analysis, and residual analysis were applied together with current understanding of the mechanisms governing embrittlement and recovery. Models were calibrated using multivariable surface-fitting techniques. The quality of fit was evaluated by considering both the Charpy annealing data used for fitting and a surrogate hardness data base. Several iterations of model calibration, evaluation with respect to mechanistic and statistical considerations, and comparison with the trends in hardness data produced improved correlation models for estimating Charpy upper shelf energy and transition temperature after irradiation and annealing.

**NUREG/CR-6330:** RESULTS OF REGULATORY IMPACT SURVEY OF INDUSTRIAL AND MEDICAL MATERIALS LICENSEES OF THE OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS. LACH, D.; MELBER, B.; BRICHOUX, J.; et al. Battelle Human Affairs Research Centers. June 1995. 100pp. 9507060313. PNL-10548. 84533:007.

This report presents the findings of a regulatory impact survey of nuclear materials licensees of the United States Nuclear Regulatory Commission (NRC). Commissioners of the NRC directed staff to provide the Commission with first hand information from licensees that could be used to improve the overall regulatory program. A self-administered, mail-out survey questionnaire was used to collect data from a sample of licensees who had interaction with the NRC during the previous 12 months. A total of 371 respondents of the 589 who were sent

questionnaires returned completed surveys, for a response rate of 63%. The body of the report presents the findings of the survey including a brief introduction to the approach used, followed by survey findings regarding regulations, policies and regulatory guidance; experience with licensing applications, renewals and amendments; inspections; reporting requirements; and enforcement actions. The appendices of the report include a copy of the survey as administered to licensees, a fuller description of the survey design and data collection methods, and detailed graphic material describing survey responses.

**NUREG/CR-6331: ATMOSPHERIC RELATIVE CONCENTRATIONS IN BUILDING WAKES.** RAMSDELL, J.V.; SIMONEN, C.A.; SMYTH, S.B. Battelle Memorial Institute, Pacific Northwest Laboratory. May 1995. 129pp. 9506220081. PNL-10521. 84394:066.

This report documents the ARCON95 computer code developed for the U.S. Nuclear Regulatory Commission Office of Nu-

clear Regulatory Research for use in control room habitability assessments. The document includes a user's guide to the code, a description of the technical basis for the code, and a programmer's guide to the code. The ARCON95 code uses hourly meteorological data and recently developed methods for estimating dispersion in the vicinity of buildings to calculate relative concentrations at control room air intakes that would be exceeded no more than five percent of the time. These concentrations are calculated for averaging periods ranging from one hour to 30 days in duration. Relative concentrations calculated by ARCON95 are significantly lower than concentrations calculated using the currently accepted procedure when winds are less than two meters per second. For higher wind speeds, ARCON95 calculates about the same concentrations as the current procedure.



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- MONTELEONE, S.**  
 NUREG/CP-0140 V01: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING. Plenary Session, Advanced Instrumentation & Control Hardware & Software, Human Factors Research, IPE & PRA.  
 NUREG/CP-0140 V02: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING. Severe Accident Research, Thermal Hydraulic Research For Advanced Passive LWRs, High-Burnup Fuel Behavior.  
 NUREG/CP-0140 V03: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING. Primary Systems Integrity, Structural And Seismic Engineering, Aging Research, Products And Applications.
- MOORE, R.A.**  
 NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.

**MUBAYI,V.**

NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Main Report.

NUREG/CR-6144 V06 P2: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Appendices.

**MUCKLER,F.A.**

NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.

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**NELSON,E.E.**

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**NEUMAN,S.P.**

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**NEYMOTIN,L.**

NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Main Report.

NUREG/CR-6144 V06 P2: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Appendices.

**NORTON,L.**

NUREG-1415 V07 N02: OFFICE OF THE INSPECTOR GENERAL. Semiannual Report To Congress, October 1, 1994 - March 31, 1995.

**O'DONNELLE,E.**

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS. Progress Report Of Field Experiments At A Humid Region Site, Beltsville, Maryland.

**ODETTE,G.R.**

NUREG/CR-6327: MODELS FOR EMBRITTLEMENT RECOVERY DUE TO ANNEALING OF REACTOR PRESSURE VESSEL STEELS.

**OFOEGBU,G.I.**

NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.

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NUREG-1275 V11: OPERATING EXPERIENCE FEEDBACK REPORT - TURBINE-GENERATOR OVERSPEED PROTECTION SYSTEM. Commercial Power Reactors.

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NUREG/CR-0200 V2P2R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Functional Modules F9-F16.

NUREG/CR-0200 V3 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Miscellaneous.

**PAUL,D.**

NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS.

**PENNELL,W.E.**

NUREG/CR-4219 V10 N2: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM. Semiannual Progress Report For April-September 1993.

**PETRONE,C.D.**

NUREG-1526: LESSONS LEARNED FROM EARLY IMPLEMENTATION OF THE MAINTENANCE RULE AT NINE NUCLEAR POWER PLANTS.

**PHILIP,J.**

NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.

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NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

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**RAHMAN,S.**

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS. Seventh Program Report March 1993 - December 1994.

NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS.

NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES. Experiments And Analysis, March 1990 - December 1994.

NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.

NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.

**RAMSDELL,J.V.**

NUREG/CR-6331: ATMOSPHERIC RELATIVE CONCENTRATIONS IN BUILDING WAKES.

**RIDKY,R.W.**

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS. Progress Report Of Field Experiments At A Humid Region Site, Beltsville, Maryland.

**ROGERS,R.D.**

NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994. Annual Report.

NUREG/CR-6256 V01: FIELD LYSIMETER INVESTIGATIONS - TEST RESULTS. Low-Level Waste Data Base Program. Test Results For Fiscal Years 1986, 1987, 1988, And 1989.

**ROSENFELD,A.R.**

NUREG/CR-6251: STAINLESS STEEL SUBMERGED ARC WELD FUSION LINE TOUGHNESS.

NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.

**RUDLAND,D.**

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS. Seventh Program Report March 1993 - December 1994.

**SANDERS,R.L.**

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS. Primer And User's Guides. Version 1.8.3 September 1994.

NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS. Reference Manuals. Version 1.8.3 September 1994.

**SANFORD,W.E.**

NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994. Annual Report.

**SAUNDERS,W.M.**

NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY.Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.  
 NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY.Function And Task Analysis.

**SCHOENFELD,I.**

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 NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY.Function And Task Analysis.

**SCHULZ,R.K.**

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS.Progress Report Of Field Experiments At A Humid Region Site,Beltsville,Maryland.

**SCOTT,P.**

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS Seventh Program Report March 1993 - December 1994.  
 NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES.Experiments And Analysis,March 1990 - December 1994  
 NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.

**SCOTTI,R.S.**

NUREG/CR-6287: MANAGEMENT CONCEPTS AND SAFETY APPLICATIONS FOR NUCLEAR FUEL FACILITIES.

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**SIMONEN,C.A.**

NUREG/CR-6331: ATMOSPHERIC RELATIVE CONCENTRATIONS IN BUILDING WAKES.

**SMITH,C.L.**

NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPHIRE) VERSION 5.0.Data Loading Manual.

**SMITH,D.**

NUREG/CR-6307: SUMMARY OF COMMENTS RECEIVED AT WORKSHOP ON USE OF A SITE SPECIFIC ADVISORY BOARD (SSAB) TO FACILITATE PUBLIC PARTICIPATION IN DECOMMISSIONING CASES.

**SMITH,R.C.**

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS.Primer And User's Guides. Version 1.8.3 September 1994.  
 NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS.Reference Manuals.Version 1.8.3 September 1994.

**SMYTH,S.B.**

NUREG/CR-6331: ATMOSPHERIC RELATIVE CONCENTRATIONS IN BUILDING WAKES.

**SOMMER,S.C.**

NUREG/CR-5657: AUTOCASK (AUTOMATIC GENERATION OF 3-D CASK MODELS).A Microcomputer Based System For Shipping Cask Design Review Analysis.

**SPENCER,B.W.**

NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

**STADLER,L.**

NUREG-1350 V07: NUCLEAR REGULATORY COMMISSION INFORMATION DIGEST.1995 Edition.

**STAMPS,D.W.**

NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

**STAUNTON,R.H.**

NUREG/CR-6016: AGING AND SERVICE WEAR OF AIR-OPERATED VALVES USED IN SAFETY-RELATED SYSTEMS AT NUCLEAR POWER PLANTS.

**STRUCKMEYER,R.**

NUREG-0837 V15 N01: NRC TLD DIRECT RADIATION MONITORING NETWORK.Progress Report. January-March 1995.

**STUART,D.S.**

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS.Primer And User's Guides. Version 1.8.3 September 1994.  
 NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS.Reference Manuals.Version 1.8.3 September 1994.

**SULLIVAN,S.G.**

NUREG/CR-3469 V08: OCCUPATIONAL DOSE REDUCTION AT NUCLEAR POWER PLANTS: ANNOTATED BIBLIOGRAPHY OF SELECTED READINGS IN RADIATION PROTECTION AND ALARA.

**SULLIVAN,T.M.**

NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994.Annual Report.

**SUMMERS,R.M.**

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS.Primer And User's Guides. Version 1.8.3 September 1994.  
 NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS.Reference Manuals.Version 1.8.3 September 1994.

**TADIOS,E.L.**

NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

**TAMP,S.**

NUREG-0847 S15: 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)

**TANIGUCHI,M.**

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**THOMPSON,S.L.**

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS.Primer And User's Guides. Version 1.8.3 September 1994.  
 NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS.Reference Manuals.Version 1.8.3 September 1994.

**TRAVIS,J.R.**

NUREG/CR-6310: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST VI-7.

**TRAVIS,R.J.**

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**VANHORN,R.L.**

NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPHIRE) VERSION 5.0.Data Loading Manual.

**WEBSTER,C.S.**

NUREG/CR-6318: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST VI-7.

**WIBLIN,C.**

NUREG/CR-6307: SUMMARY OF COMMENTS RECEIVED AT WORKSHOP ON USE OF A SITE SPECIFIC ADVISORY BOARD (SSAB) TO FACILITATE PUBLIC PARTICIPATION IN DECOMMISSIONING CASES.

**WILKOWSKI,G.M.**

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS.Seventh Program Report March 1993 - December 1994.

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NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES. Experiments And Analysis. March 1990 - December 1994.  
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### Dosimetry

NUREG/CR-6112: IMPACT OF REDUCED DOSE LIMITS ON NRC LICENSED ACTIVITIES. Major issues in The Implementation Of ICRP/NCRP Dose Limit Recommendations Final Report.

### EPICOR-II

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### Enforcement Action

NUREG-0940 V14 N1 P1: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, REACTOR LICENSEES. Quarterly Progress Report. January-March 1995.  
NUREG-0940 V14 N1 P2: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, MEDICAL LICENSEES. Quarterly Progress Report. January-March 1995.  
NUREG-0940 V14 N1 P3: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, MATERIAL LICENSEES (NON-MEDICAL). Quarterly Progress Report. January-March 1995.

### Enforcement Program

NUREG-1525: ASSESSMENT OF THE NRC ENFORCEMENT PROGRAM.

### Examiner Standards

NUREG-1478 R01: NON-POWER REACTOR OPERATOR LICENSING EXAMINER STANDARDS.

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NUREG/CR-6046: ALERTNESS, PERFORMANCE, AND OFF-DUTY SLEEP ON 8-HOUR AND 12-HOUR NIGHT SHIFTS IN A SIMULATED CONTINUOUS OPERATIONS CONTROL ROOM SETTING.

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### Field Lysimeter

NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994. Annual Report.  
NUREG/CR-6256 V01: FIELD LYSIMETER INVESTIGATIONS - TEST RESULTS. Low-Level Waste Data Base Program. Test Results For Fiscal Years 1986, 1987, 1988, And 1989.

### Final Environmental Statement

NUREG-0498 S01: FINAL ENVIRONMENTAL STATEMENT RELATED TO THE OPERATION OF WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2. Docket Nos. 50-390 And 50-391. (Tennessee Valley Authority)

### Financial Statement

NUREG-1470 V04: FINANCIAL STATEMENT FOR FISCAL YEAR 1994.

### Fission Product Release

NUREG/CR-6318: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST VI-7.

### Fracture

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS. Seventh Program Report March 1993 - December 1994.  
NUREG/CR-6299: EFFECTS OF TOUGHNESS ANISOTROPY AND COMBINED TENSION, TORSION, AND BENDING LOADS ON FRACTURE BEHAVIOR OF FERRITIC NUCLEAR PIPE.  
NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.

### Fracture Flow

NUREG/CR-6308: AN OVERVIEW OF INSTABILITY AND FINGERING DURING IMMISCIBLE FLUID FLOW IN POROUS AND FRACTURED MEDIA.

### Fracture Mechanics

NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS.

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NUREG/CR-6275: MECHANICAL PROPERTIES OF THERMALLY AGED CAST STAINLESS STEELS FROM SHIPPINGPORT REACTOR COMPONENTS.

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NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.

### Fuel Damage

NUREG/CR-6318: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST VI-7.

### Fundamental Nuclear Material Control

NUREG-1280 R01: STANDARD FORMAT AND CONTENT ACCEPTANCE CRITERIA FOR THE MATERIAL CONTROL AND ACCOUNTING (MC&A) REFORM AMENDMENT.

### Fusion Line Crack

NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.

### Generic Safety Issues

NUREG-0933 S18: A PRIORITIZATION OF GENERIC SAFETY ISSUES.

### Groundwater

NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.



**Heavy-Section Irradiation Program**

NUREG/CR-5591 V05 N1: HEAVY-SECTION STEEL IRRADIATION PROGRAM.Semiannual Progress Report For September 1993 Through March 1994.

**Heavy-Section Steel Technology Program**

NUREG/CR-4219 V10 N2: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM.Semiannual Progress Report For April-September 1993.

**Human Factor**

NUREG/CP-0140 V01: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.Plenary Session, Advanced Instrumentation & Control Hardware & Software, Human Factors Research, IPE & PRA.  
NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY.Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.  
NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY.Function And Task Analysis.

**Hydrology**

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS.Progress Report Of Field Experiments At A Humid Region Site,Beltsville,Maryland.

**IRRAS**

NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPHIRE) VERSION 5.0.Data Loading Manual.

**Immiscible Displacement**

NUREG/CR-6308: AN OVERVIEW OF INSTABILITY AND FINGERING DURING IMMISCIBLE FLUID FLOW IN CYCLOS AND FRACTURED MEDIA.

**Information Digest**

NUREG-1350 V07: NUCLEAR REGULATORY COMMISSION INFORMATION DIGEST.1995 Edition.

**Inservice Testing**

NUREG-1482: GUIDELINES FOR INSERVICE TESTING AT NUCLEAR POWER PLANTS.

**Instructor Station**

NUREG-1527: NRC'S OBJECT-ORIENTED SIMULATOR INSTRUCTOR STATION.

**Irradiated Reactor Fuel**

NUREG-0725 R10: PUBLIC INFORMATION CIRCULAR FOR SHIPMENTS OF IRRADIATED REACTOR FUEL.

**J-R Curve**

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS.Seventh Program Report March 1993 - December 1994.  
NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.  
NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.

**Leak-Before-Break**

NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS.  
NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES.Experiments And Analysis, March 1990 - December 1994.  
NUREG/CR-6251: STAINLESS STEEL SUBMERGED ARC WELD FUSION LINE TOUGHNESS.  
NUREG/CR-6299: EFFECTS OF TOUGHNESS ANISOTROPY AND COMBINED TENSION, TORSION, AND BENDING LOADS ON FRACTURE BEHAVIOR OF FERRITIC NUCLEAR PIPE.  
NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.

**Legal Issuances**

NUREG-0750 V41 I01: INDEXES TO NUCLEAR REGULATORY COMMISSION ISSUANCES.January-March 1995.  
NUREG-0750 V41 N02: NUCLEAR REGULATORY COMMISSION ISSUANCES FOR FEBRUARY 1995. Pages 71-178.  
NUREG-0750 V41 N03: NUCLEAR REGULATORY COMMISSION ISSUANCES FOR MARCH 1995. Pages 179-243.  
NUREG-0750 V41 N04: NUCLEAR REGULATORY COMMISSION ISSUANCES FOR APRIL 1995. Pages 245-319.

**Lessons Learned**

NUREG-1526: LESSONS LEARNED FROM EARLY IMPLEMENTATION OF THE MAINTENANCE RULE AT NINE NUCLEAR POWER PLANTS.

**Licensed Operating Reactors**

NUREG-0020 V19: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT.Data As Of December 31, 1994.(Gray Book I)

**Licensing Evaluation**

NUREG/CR-0200 V1 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION.Control Modules.  
NUREG/CR-0200 V2P1R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION.Functional Modules F1-F8.  
NUREG/CR-0200 V2P2R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION.Functional Modules F9-F16.  
NUREG/CR-0200 V3 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Miscellaneous.

**Low Power**

NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1.Evaluation Of Severe Accident Risk During Mid-Loop Operations.Main Report.  
NUREG/CR-6144 V06 P2: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1.Evaluation Of Severe Accident Risk During Mid-Loop Operations.Appendices.

**Low-Level Radioactive Waste Disposal**

NUREG/CR-6114 V02: AUXILIARY ANALYSES IN SUPPORT OF PERFORMANCE ASSESSMENT OF A HYPOTHETICAL LOW-LEVEL WASTE FACILITY.Two-Phase Flow And Contaminant Transport In Unsaturated Soils With Application To Low-Level Radioactive Waste Disposal.

**Low-Level Waste Data Base**

NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994.Annual Report.  
NUREG/CR-6256 V01: FIELD LYSIMETER INVESTIGATIONS - TEST RESULTS.Low-Level Waste Data Base Program.Test Results For Fiscal Years 1986, 1987,1988, And 1989.

**Low-Level Waste Disposal**

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS.Progress Report Of Field Experiments At A Humid Region Site,Beltsville,Maryland.

**MELCOR Computer Code**

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS.Primer And User's Guides. Version 1.8.3 September 1994.  
NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS.Reference Manuals Version 1.8.3 September 1994.

**Maintenance Rule**

NUREG-1526: LESSONS LEARNED FROM EARLY IMPLEMENTATION OF THE MAINTENANCE RULE AT NINE NUCLEAR POWER PLANTS.

**Material Control**

NUREG-1280 R01: STANDARD FORMAT AND CONTENT ACCEPTANCE CRITERIA FOR THE MATERIAL CONTROL AND ACCOUNTING (MC&A) REFORM AMENDMENT.

**Mid-Loop Operation**

NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1.Evaluation Of Severe Accident Risk During Mid-Loop Operations.Main Report.  
NUREG/CR-6144 V06 P2: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1.Evaluation Of Severe Accident Risk During Mid-Loop Operations.Appendices.

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NUREG/CR-6112: IMPACT OF REDUCED DOSE LIMITS ON NRC LICENSED ACTIVITIES. Major Issues In The Implementation Of ICRP/NCRP Dose Limit Recommendations.Final Report.

### Office Of The Inspector General

NUREG-1415 V07 N02: OFFICE OF THE INSPECTOR GENERAL Semiannual Report To Congress, October 1, 1994 - March 31, 1995.

### Operating Experience Feedback Report

NUREG-1275 V11: OPERATING EXPERIENCE FEEDBACK REPORT - TURBINE-GENERATOR OVERSPEED PROTECTION SYSTEM.Commercial Power Reactors.

### Operator Licensing

NUREG-1478 R01: NON-POWER REACTOR OPERATOR LICENSING EXAMINER STANDARDS.

### Overspeed Protection System

NUREG-1275 V11: OPERATING EXPERIENCE FEEDBACK REPORT - TURBINE-GENERATOR OVERSPEED PROTECTION SYSTEM.Commercial Power Reactors.

### PRA Data Loading

NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPHIRE) VERSION 5.0.Data Loading Manual.

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NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS.Seventh Program Report March 1993 - December 1994.  
NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS.  
NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES.Experiments And Analysis.March 1990 - December 1994.  
NUREG/CR-6251: STAINLESS STEEL SUBMERGED ARC WELD FUSION LINE TOUGHNESS.  
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NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

### Probabilistic Risk Assessment

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS.Primer And User's Guides. Version 1.8.3 September 1994.  
NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS.Reference Manuals Version 1.8.3 September 1994.

### Proceeding

NUREG/CP-0140 V01: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.Plenary Session, Advanced Instrumentation & Control Hardware & Software, Human Factors Research, IPE & PRA.  
NUREG/CP-0140 V02: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.Severe Accident Research, Thermal Hydraulic Research For Advanced Passive LWRs, High-Burnup Fuel Behavior.  
NUREG/CP-0140 V03: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.Primary Systems Integrity, Structural And Seismic Engineering, Aging Research, Products And Applications.

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NUREG/CR-5857: AGING OF TURBINE DRIVES FOR SAFETY-RELATED PUMPS IN NUCLEAR POWER PLANTS.

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### Reactor Instrumentation

NUREG/CP-0140 V01: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.Plenary Session, Advanced Instrumentation & Control Hardware & Software, Human Factors Research, IPE & PRA.

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NUREG/CP-0140 V01: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.Plenary Session, Advanced Instrumentation & Control Hardware & Software, Human Factors Research, IPE & PRA.  
NUREG/CP-0140 V02: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING.Severe Accident Research, Thermal Hydraulic Research For Advanced Passive LWRs, High-Burnup Fuel Behavior.  
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**Regulation**

- NUREG/CR-5975 R01: INCENTIVE REGULATION OF INVESTOR-OWNED NUCLEAR POWER PLANTS BY PUBLIC UTILITY REGULATORS.
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- NUREG/CR-6330: RESULTS OF REGULATORY IMPACT SURVEY OF INDUSTRIAL AND MEDICAL MATERIALS LICENSEES OF THE OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS.

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- NUREG/CR-6330: RESULTS OF REGULATORY IMPACT SURVEY OF INDUSTRIAL AND MEDICAL MATERIALS LICENSEES OF THE OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS.

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- NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994. Annual Report.
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- NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPHIRE) VERSION 5.0. Data Loading Manual.

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- NUREG/CR-0200 V1 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Control Modules.
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**Safety Application**

- NUREG/CR-6287: MANAGEMENT CONCEPTS AND SAFETY APPLICATIONS FOR NUCLEAR FUEL FACILITIES.

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- NUREG-0847 S15: 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)

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- NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS Reference Manuals Version 1.8.3 September 1994.

- NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Main Report.
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- NUREG/CR-5657: AUTOCASK (AUTOMATIC GENERATION OF 3-D CASK MODELS). A Microcomputer Based System For Shipping Cask Design Review Analysis.
- NUREG/CR-6322: BUCKLING ANALYSIS OF SPENT FUEL BASKET.

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- NUREG/CR-6275: MECHANICAL PROPERTIES OF THERMALLY AGED CAST STAINLESS STEELS FROM SHIPPINGPORT REACTOR COMPONENTS.

**Short Crack**

- NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS. Seventh Program Report March 1993 - December 1994.

**Shutdown Operation**

- NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Main Report.
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**Standard Technical Specifications**

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- NUREG-1430 V02 R01: STANDARD TECHNICAL SPECIFICATIONS BABCOCK AND WILCOX PLANTS. Bases (Sections 2.0 - 3.3).
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NUREG-1434 V03 R01: STANDARD TECHNICAL SPECIFICATIONS  
GENERAL ELECTRIC PLANTS, BWR/6 Bases 3.4 - 3.10.

### Structural Analysis

NUREG/CR-5657: AUTOCASK (AUTOMATIC GENERATION OF 3-D  
CASK MODELS) A Microcomputer Based System For Shipping Cask  
Design Review Analysis.

### Systems Integrity

NUREG/CP-0140 V03: PROCEEDINGS OF THE TWENTY-SECOND  
WATER REACTOR SAFETY INFORMATION MEETING. Primary Sys-  
tems Integrity, Structural And Seismic Engineering, Aging Research,  
Products And Applications.

### TLD

NUREG-0837 V15 N01: NRC TLD DIRECT RADIATION MONITORING  
NETWORK Progress Report, January-March 1995.

### Thermal Aging

NUREG/CR-6275: MECHANICAL PROPERTIES OF THERMALLY AGED  
CAST STAINLESS STEELS FROM SHIPPINGPORT REACTOR COM-  
PONENTS.

### Thermal-Hydraulic

NUREG/CP-0140 V02: PROCEEDINGS OF THE TWENTY-SECOND  
WATER REACTOR SAFETY INFORMATION MEETING. Severe Acci-  
dent Research, Thermal Hydraulic Research For Advanced Passive  
LWRs, High-Burnup Fuel Behavior  
NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS  
FOR LEAK-RATE-DETECTION APPLICATIONS.  
NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS. Primer  
And User's Guides, Version 1.8.3 September 1994.  
NUREG/CR-6119 V02: MELCOR COMPUTER CODE  
MANUALS. Reference Manuals, Version 1.8.3 September 1994.

### Thermoluminescent Dosimeter

NUREG-0837 V15 N01: NRC TLD DIRECT RADIATION MONITORING  
NETWORK Progress Report, January-March 1995.

### Title List

NUREG-0540 V17 N02: TITLE LIST OF DOCUMENTS MADE PUBLICLY  
AVAILABLE, February 1-28, 1995.

NUREG-0540 V17 N03: TITLE LIST OF DOCUMENTS MADE PUBLICLY  
AVAILABLE March 1-31, 1995.  
NUREG-0540 V17 N04: TITLE LIST OF DOCUMENTS MADE PUBLICLY  
AVAILABLE, April 1-30, 1995.

### Turbine Drive

NUREG/CR-5857: AGING OF TURBINE DRIVES FOR SAFETY-RELAT-  
ED PUMPS IN NUCLEAR POWER PLANTS.

### Turbine-Generator

NUREG-1275 V11: OPERATING EXPERIENCE FEEDBACK REPORT -  
TURBINE-GENERATOR OVERSPEED PROTECTION  
SYSTEM. Commercial Power Reactors.

### Two-Phase Flow

NUREG/CR-6114 V02: AUXILIARY ANALYSES IN SUPPORT OF PER-  
FORMANCE ASSESSMENT OF A HYPOTHETICAL LOW-LEVEL  
WASTE FACILITY. Two-Phase Flow And Contaminant Transport In Un-  
saturated Soils With Application To Low-Level Radioactive Waste Dis-  
posal.

### Unsaturated Soil

NUREG/CR-6114 V02: AUXILIARY ANALYSES IN SUPPORT OF PER-  
FORMANCE ASSESSMENT OF A HYPOTHETICAL LOW-LEVEL  
WASTE FACILITY. Two-Phase Flow And Contaminant Transport In Un-  
saturated Soils With Application To Low-Level Radioactive Waste Dis-  
posal.

### Valve

NUREG-1482: GUIDELINES FOR INSERVICE TESTING AT NUCLEAR  
POWER PLANTS.

### Vendor Inspection

NUREG-0040 V19 N01: LICENSEE CONTRACTOR AND VENDOR IN-  
SPECTION STATUS REPORT, Quarterly Report, January-March  
1995. (White Book)

### Violation

NUREG-1525: ASSESSMENT OF THE NRC ENFORCEMENT PRO-  
GRAM.

### Water Infiltration

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO  
NEAR SURFACE LLW DISPOSAL UNITS. Progress Report Of Field Ex-  
periments At A Humid Region Site, Beltsville, Maryland.

### Weid

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING  
WELDS. Seventh Program Report March 1993 - December 1994.  
NUREG/CR-6251: STAINLESS STEEL SUBMERGED ARC WELD  
FUSION LINE TOUGHNESS.

## 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.

### ADVISORY COMMITTEE(S)

ACRS - ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
NUREG-1125 V16: A COMPILATION OF REPORTS OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS. 1994 Annual.

### OFFICE OF EXECUTIVE DIRECTOR FOR OPERATIONS (EDO)

REGION 1 (POST 820201)  
NUREG-0837 V15 N01: NRC TLD DIRECT RADIATION MONITORING NETWORK Progress Report. January-March 1995.  
WALNUT CREEK FIELD OFC. R4 (POST 940404)  
NUREG-1525: ASSESSMENT OF THE NRC ENFORCEMENT PROGRAM.  
OFC OF ENFORCEMENT (POST 870413)  
NUREG-0940 V14 N1 P1: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, REACTOR LICENSEES. Quarterly Progress Report. January-March 1995.  
NUREG-0940 V14 N1 P2: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, MEDICAL LICENSEES. Quarterly Progress Report. January-March 1995.  
NUREG-0940 V14 N1 P3: ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED, MATERIAL LICENSEES (NON-MEDICAL). Quarterly Progress Report. January-March 1995.  
NUREG-1525: ASSESSMENT OF THE NRC ENFORCEMENT PROGRAM.

### EDO - OFFICE OF ADMINISTRATION (PRE 870413 & POST 890205)

DIVISION OF FREEDOM OF INFORMATION & PUBLICATIONS SERVICES (POST 940714)  
NUREG-0540 V17 N02: TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. February 1-28, 1995.  
NUREG-0540 V17 N03: TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. March 1-31, 1995.  
NUREG-0540 V17 N04: TITLE LIST OF DOCUMENTS MADE PUBLICLY AVAILABLE. April 1-30, 1995.  
NUREG-0750 V41 N01: INDEXES TO NUCLEAR REGULATORY COMMISSION ISSUANCES. January-March 1995.  
NUREG-0750 V41 N02: NUCLEAR REGULATORY COMMISSION ISSUANCES FOR FEBRUARY 1995. Pages 71-178.  
NUREG-0750 V41 N03: NUCLEAR REGULATORY COMMISSION ISSUANCES FOR MARCH 1995. Pages 179-243.  
NUREG-0750 V41 N04: NUCLEAR REGULATORY COMMISSION ISSUANCES FOR APRIL 1995. Pages 245-319.

### EDO - OFFICE OF THE CONTROLLER (PRE 820418 & POST 890205)

OFFICE OF THE CONTROLLER (POST 890205)  
NUREG-1470 V04: FINANCIAL STATEMENT FOR FISCAL YEAR 1994.  
DIVISION OF BUDGET & ANALYSIS (POST 890205)  
NUREG-1350 V07: NUCLEAR REGULATORY COMMISSION INFORMATION DIGEST. 1995 Edition.

### EDO - OFFICE FOR ANALYSIS & EVALUATION OF OPERATIONAL DATA

TECHNICAL TRAINING CENTER  
NUREG-1527: NRC'S OBJECT-ORIENTED SIMULATOR INSTRUCTOR STATION.  
DIVISION OF SAFETY PROGRAMS (POST 870413)  
NUREG-1275 V11: OPERATING EXPERIENCE FEEDBACK REPORT - TURBINE-GENERATOR OVERSPEED PROTECTION SYSTEM. Commercial Power Reactors.

### EDO - OFFICE OF INFORMATION RESOURCES MANAGEMENT & ARM (POST 861109)

OFFICE OF INFORMATION RESOURCES MANAGEMENT (POST 890205)  
NUREG-0020 V19: LICENSED OPERATING REACTORS STATUS SUMMARY REPORT. Data As Of December 31, 1994. (Gray Book I)

### EDO - OFFICE OF NUCLEAR MATERIAL SAFETY & SAFEGUARDS

DIVISION OF INDUSTRIAL & MEDICAL NUCLEAR SAFETY (POST 870729)  
NUREG-0725 R10: PUBLIC INFORMATION CIRCULAR FOR SHIPMENTS OF IRRADIATED REACTOR FUEL.  
OPERATIONS BRANCH  
NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.  
NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Function And Task Analysis.  
DIVISION OF FUEL CYCLE SAFETY & SAFEGUARDS (POST 930207)  
NUREG-1280 R01: STANDARD FORMAT AND CONTENT ACCEPTANCE CRITERIA FOR THE MATERIAL CONTROL AND ACCOUNTING (MC&A) REFORM AMENDMENT.

### U.S. NUCLEAR REGULATORY COMMISSION

OFFICE OF THE INSPECTOR GENERAL (POST 890417)  
NUREG-1415 V07 N02: OFFICE OF THE INSPECTOR GENERAL. Semiannual Report To Congress. October 1, 1994 - March 31, 1995.

### EDO - OFFICE OF NUCLEAR REGULATORY RESEARCH (POST 820405)

DIVISION OF ENGINEERING TECHNOLOGY (POST 941217)  
NUREG-0933 S18: A PRIORITIZATION OF GENERIC SAFETY ISSUES.  
WASTE MANAGEMENT BRANCH (POST 941217)  
NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS. Progress Report Of Field Experiments At A Humid Region Site. Beltsville, Maryland.  
NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.  
CONTROL, INSTRUMENTATION & HUMAN FACTORS BRANCH (POST 941217)  
NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.  
NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Function And Task Analysis.

### EDO - OFFICE OF NUCLEAR REACTOR REGULATION (POST 800428)

OFFICE OF NUCLEAR REACTOR REGULATION (POST 941001)  
NUREG-0040 V19 N01: LICENSEE CONTRACTOR AND VENDOR INSPECTION STATUS REPORT. Quarterly Report. January-March 1995. (White Book)  
NUREG-1430 V01 R01: STANDARD TECHNICAL SPECIFICATIONS BABCOCK AND WILCOX PLANTS. Specifications.  
NUREG-1430 V02 R01: STANDARD TECHNICAL SPECIFICATIONS BABCOCK AND WILCOX PLANTS. Bases (Sections 2.0 - 3.3).  
NUREG-1430 V03 R01: STANDARD TECHNICAL SPECIFICATIONS BABCOCK AND WILCOX PLANTS. Bases (Sections 3.4 - 3.9).  
NUREG-1431 V01 R01: STANDARD TECHNICAL SPECIFICATIONS WESTINGHOUSE PLANTS. Specifications.  
NUREG-1431 V02 R01: STANDARD TECHNICAL SPECIFICATIONS WESTINGHOUSE PLANTS. Bases (Sections 2.0 - 3.3).  
NUREG-1431 V03 R01: STANDARD TECHNICAL SPECIFICATIONS WESTINGHOUSE PLANTS. Bases (Sections 3.4 - 3.9).  
NUREG-1432 V01 R01: STANDARD TECHNICAL SPECIFICATIONS COMBUSTION ENGINEERING PLANTS. Specifications.  
NUREG-1432 V02 R01: STANDARD TECHNICAL SPECIFICATIONS COMBUSTION ENGINEERING PLANTS. Bases (Sections 2.0 - 3.3).  
NUREG-1432 V03 R01: STANDARD TECHNICAL SPECIFICATIONS COMBUSTION ENGINEERING PLANTS. Bases (Sections 3.4 - 3.9).

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NUREG-1433 V01 R01: STANDARD TECHNICAL SPECIFICATIONS  
GENERAL ELECTRIC PLANTS BWR/4 Specifications.  
NUREG-1433 V02 R01: STANDARD TECHNICAL SPECIFICATIONS  
GENERAL ELECTRIC PLANTS BWR/4 Bases (Sections 2.0 - 3.3).  
NUREG-1433 V03 R01: STANDARD TECHNICAL SPECIFICATIONS  
GENERAL ELECTRIC PLANTS BWR/4 Bases (Sections 3.4 - 3.10).  
NUREG-1434 V01 R01: STANDARD TECHNICAL SPECIFICATIONS  
GENERAL ELECTRIC PLANTS, BWR/6 Specifications.  
NUREG-1434 V02 R01: STANDARD TECHNICAL SPECIFICATIONS  
GENERAL ELECTRIC PLANTS, BWR/6 Bases (Sections 2.0 - 3.3).  
NUREG-1434 V03 R01: STANDARD TECHNICAL SPECIFICATIONS  
GENERAL ELECTRIC PLANTS, BWR/6 Bases 3.4 - 3.10).  
NUREG-147B R01: NON-POWER REACTOR OPERATOR LICENSING  
EXAMINER STANDARDS.

NUREG-1526: LESSONS LEARNED FROM EARLY IMPLEMENTA-  
TION OF THE MAINTENANCE RULE AT NINE NUCLEAR POWER  
PLANTS.  
DIVISION OF REACTOR PROJECTS I/II (DRPE) POST 941001)  
NUREG-0847 S15: 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)  
ASSOCIATE DIRECTOR FOR ADVANCED REACTORS & LICENSE RE-  
NEWAL (ADAR) (POST  
NUREG-0498 S01: FINAL ENVIRONMENTAL STATEMENT RELATED  
TO THE OPERATION OF WATTS BAR NUCLEAR PLANT, UNITS 1  
AND 2. Docket Nos. 50-390 And 50-391. (Tennessee Valley Authority)  
OFFICE OF NUCLEAR REACTOR REGULATION, DIRECTOR (POST  
870411)  
NUREG-1482: GUIDELINES FOR INSERVICE TESTING AT NUCLEAR  
POWER PLANTS.

## **NRC Originating Organization Index (International Agreements)**

This index lists those NRC organizations that have published international agreement 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.

There were no NUREG/IA reports published during this quarter.





## 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.

### EDO - OFFICE OF NUCLEAR MATERIAL SAFETY & SAFEGUARDS

DIVISION OF INDUSTRIAL & MEDICAL NUCLEAR SAFETY (POST 870729)

- NUREG/CR-0200 V1 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION Control Modules.
- NUREG/CR-0200 V2P1R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION Functional Modules F1-F8.
- NUREG/CR-0200 V2P2R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION Functional Modules F9-F16.
- NUREG/CR-0200 V3 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION Miscellaneous.
- NUREG/CR-5657: AUTOCASK (AUTOMATIC GENERATION OF 3-D CASK MODELS) A Microcomputer Based System For Shipping Cask Design Review Analysis.
- NUREG/CR-6322: BUCKLING ANALYSIS OF SPENT FUEL BASKET.
- NUREG/CR-6330: RESULTS OF REGULATORY IMPACT SURVEY OF INDUSTRIAL AND MEDICAL MATERIALS LICENSEES OF THE OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS, DIVISION OF FUEL CYCLE SAFETY & SAFEGUARDS (POST 930207)
- NUREG/CR-6287: MANAGEMENT CONCEPTS AND SAFETY APPLICATIONS FOR NUCLEAR FUEL FACILITIES.

### EDO - OFFICE OF NUCLEAR REGULATORY RESEARCH (POST 820405)

OFFICE OF NUCLEAR REGULATORY RESEARCH (POST 941217)

- NUREG/CR-6331: ATMOSPHERIC RELATIVE CONCENTRATIONS IN BUILDING WAKES
- DIVISION OF ENGINEERING TECHNOLOGY (POST 941217)
- NUREG/CR-4219 V10 N2: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM Semiannual Progress Report For April-September 1993.
- NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS Seventh Program Report March 1993 - December 1994.
- NUREG/CR-5591 V05 N1: HEAVY-SECTION STEEL IRRADIATION PROGRAM Semiannual Progress Report For September 1993 Through March 1994.
- NUREG/CR-5857: AGING OF TURBINE DRIVES FOR SAFETY-RELATED PUMPS IN NUCLEAR POWER PLANTS.
- NUREG/CR-5954: EFFECT ON AGING ON PWR CHEMICAL AND VOLUME CONTROL SYSTEM.
- NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS.
- NUREG/CR-6016: AGING AND SERVICE WEAR OF AIR-OPERATED VALVES USED IN SAFETY-RELATED SYSTEMS AT NUCLEAR POWER PLANTS.
- NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES. Experiments And Analysis, March 1990 - December 1994.
- NUREG/CR-6251: STAINLESS STEEL SUBMERGED ARC WELD FUSION LINE TOUGHNESS.
- NUREG/CR-6275: MECHANICAL PROPERTIES OF THERMALLY AGED CAST STAINLESS STEELS FROM SHIPPINGPORT REACTOR COMPONENTS.
- NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.
- NUREG/CR-6299: EFFECTS OF TENSILE ANISOTROPY AND COMBINED TENSION, TORSION, AND BENDING LOADS ON FRACTURE BEHAVIOR OF FERRITIC NUCLEAR PIPE.
- NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.
- NUREG/CR-6327: MODELS FOR EMBRITTELEMENT RECOVERY DUE TO ANNEALING OF REACTOR PRESSURE VESSEL STEELS.
- DIVISION OF REGULATORY APPLICATIONS (POST 941217)
- NUREG/CR-3469 V08: OCCUPATIONAL DOSE REDUCTION AT NUCLEAR POWER PLANTS: ANNOTATED BIBLIOGRAPHY OF SELECTED READINGS IN RADIATION PROTECTION AND ALARA.

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS. Progress Report Of Field Experiments At A Humid Region Site, Beltsville, Maryland.

NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994 Annual Report.

NUREG/CR-6112: IMPACT OF REDUCED DOSE LIMITS ON NRC LICENSEE ACTIVITIES. Major Issues In The Implementation Of ICRP/NCRP Dose Limit Recommendations. Final Report.

NUREG/CR-6114 V02: AUXILIARY ANALYSES IN SUPPORT OF PERFORMANCE ASSESSMENT OF A HYPOTHETICAL LOW-LEVEL WASTE FACILITY. Two-Phase Flow And Contaminant Transport In Unsaturated Soils With Application To Low-Level Radioactive Waste Disposal.

NUREG/CR-6256 V01: FIELD LYSIMETER INVESTIGATIONS - TEST RESULTS. Low-Level Waste Data Base Program. Test Results For Fiscal Years 1986, 1987, 1988, And 1989.

NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.

NUREG/CR-6307: SUMMARY OF COMMENTS RECEIVED AT WORKSHOP ON USE OF A SITE SPECIFIC ADVISORY BOARD (SSAB) TO FACILITATE PUBLIC PARTICIPATION IN DECOMMISSIONING CASES.

DIVISION OF SYSTEMS TECHNOLOGY (POST 941217)

NUREG/CR-6046: ALERTNESS, PERFORMANCE, AND OFF-DUTY SLEEP ON 8-HOUR AND 12-HOUR NIGHT SHIFTS IN A SIMULATED CONTINUOUS OPERATIONS CONTROL ROOM SETTING.

NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPPHIRE) VERSION 5.0. Data Loading Manual.

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS. Primer And User's Guides. Version 1.8.3 September 1994.

NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS Reference Manuals. Version 1.8.3 September 1994.

NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.

NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Function And Task Analysis.

NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Main Report.

NUREG/CR-6144 V06 P2: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Appendices.

NUREG/CR-6312: ASSESSMENT OF FIBER OPTIC PRESSURE SENSORS.

NUREG/CR-6315: CANDU REACTORS, THEIR REGULATION IN CANADA, AND THE IDENTIFICATION OF RELEVANT NRC SAFETY ISSUES.

NUREG/CR-6318: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST VI-7.

DIVISION OF RISK ANALYSIS & OPERATIONS (840429-860720)

NUREG/CR-6308: AN OVERVIEW OF INSTABILITY AND FINGERING DURING IMMISCIBLE FLUID FLOW IN POROUS AND FRACTURED MEDIA.

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EDO - OFFICE OF NUCLEAR REACTOR REGULATION (POST 800428)  
OFFICE OF NUCLEAR REACTOR REGULATION (POST 841001)  
NUREG/CR-2850 V13: DOSE COMMITMENTS DUE TO RADIOAC-  
TIVE RELEASES FROM NUCLEAR POWER PLANT SITES IN 1991.

LICENSE RENEWAL & ENVIRONMENTAL REVIEW PROJECT DIRE-  
CTORATE (PDLR) (POST  
NUREG/CR-5975 R01: INCENTIVE REGULATION OF INVESTOR-  
OWNED NUCLEAR POWER PLANTS BY PUBLIC UTILITY REGU-  
LATORS.

## 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.

### ADVANCED SYSTEMS TECHNOLOGY, INC.

NUREG/CR-6307: SUMMARY OF COMMENTS RECEIVED AT WORKSHOP ON USE OF A SITE SPECIFIC ADVISORY BOARD (SSAB) TO FACILITATE PUBLIC PARTICIPATION IN DECOMMISSIONING CASES.

### ANALYSIS & MEASUREMENT SERVICES CORP.

NUREG/CR-6312: ASSESSMENT OF FIBER OPTIC PRESSURE SENSORS.

### ARGONNE NATIONAL LABORATORY

NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.  
NUREG/CR-6275: MECHANICAL PROPERTIES OF THERMALLY AGED CAST STAINLESS STEELS FROM SHIPPINGPORT REACTOR COMPONENTS.  
NUREG/CR-6315: CANDU REACTORS, THEIR REGULATION IN CANADA, AND THE IDENTIFICATION OF RELEVANT NRC SAFETY ISSUES.

### ARIZONA, UNIV. OF, TUCSON, AZ

NUREG/CR-6308: AN OVERVIEW OF INSTABILITY AND FINGERING DURING IMMISCIBLE FLUID FLOW IN POROUS AND FRACTURED MEDIA.

### BATTELLE HUMAN AFFAIRS RESEARCH CENTERS

NUREG/CR-6330: RESULTS OF REGULATORY IMPACT SURVEY OF INDUSTRIAL AND MEDICAL MATERIALS LICENSEES OF THE OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS.

### BATTELLE MEMORIAL INSTITUTE, COLUMBUS LABORATORIES

NUREG/CR-4599 V04 N1: SHORT CRACKS IN PIPING AND PIPING WELDS. Seventh Program Report March 1993 - December 1994.  
NUREG/CR-6004: PROBABILISTIC PIPE FRACTURE EVALUATIONS FOR LEAK-RATE-DETECTION APPLICATIONS.  
NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES. Experiments And Analysis, March 1990 - December 1994.  
NUREG/CR-6251: STAINLESS STEEL SUBMERGED ARC WELD FUSION LINE TOUGHNESS.  
NUREG/CR-6297: FRACTURE EVALUATIONS OF FUSION LINE CRACKS IN NUCLEAR PIPE BIMETALLIC WELDS.  
NUREG/CR-6299: EFFECTS OF TOUGHNESS ANISOTROPY AND COMBINED TENSION, TORSION, AND BENDING LOADS ON FRACTURE BEHAVIOR OF FERRITIC NUCLEAR PIPE.  
NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.

### BATTELLE MEMORIAL INSTITUTE, PACIFIC NORTHWEST LABORATORY

NUREG/CR-2850 V13: DOSE COMMITMENTS DUE TO RADIOACTIVE RELEASES FROM NUCLEAR POWER PLANT SITES IN 1991.  
NUREG/CR-5975 R01: INCENTIVE REGULATION OF INVESTOR-OWNED NUCLEAR POWER PLANTS BY PUBLIC UTILITY REGULATORS.  
NUREG/CR-6330: RESULTS OF REGULATORY IMPACT SURVEY OF INDUSTRIAL AND MEDICAL MATERIALS LICENSEES OF THE OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS.  
NUREG/CR-6331: ATMOSPHERIC RELATIVE CONCENTRATIONS IN BUILDING WAKES.

### BROOKHAVEN NATIONAL LABORATORY

NUREG/CP-0140 V01: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING. Plenary Session, Advanced Instrumentation & Control Hardware & Software, Human Factors Research, IPE & PRA.  
NUREG/CP-0140 V02: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING. Severe Acci-

dent Research Thermal Hydraulic Research For Advanced Passive LWRs, High-Burnup Fuel Behavior.

NUREG/CP-0140 V03: PROCEEDINGS OF THE TWENTY-SECOND WATER REACTOR SAFETY INFORMATION MEETING. Primary Systems Integrity, Structural And Seismic Engineering, Aging Research, Products And Applications.

NUREG/CR-3469 V08: OCCUPATIONAL DOSE REDUCTION AT NUCLEAR POWER PLANTS. ANNOTATED BIBLIOGRAPHY OF SELECTED READINGS IN RADIATION PROTECTION AND ALARA.

NUREG/CR-5954: EFFECT ON AGING ON PWR CHEMICAL AND VOLUME CONTROL SYSTEM.

NUREG/CR-6112: IMPACT OF REDUCED DOSE LIMITS ON NRC LICENSED ACTIVITIES. Major Issues In The Implementation Of ICRP/NCRP Dose Limit Recommendations. Final Report.

NUREG/CR-6144 V06 P1: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Main Report.

NUREG/CR-6144 V06 P2: EVALUATION OF POTENTIAL SEVERE ACCIDENTS DURING LOW POWER AND SHUTDOWN OPERATIONS AT SURRY, UNIT 1. Evaluation Of Severe Accident Risk During Mid-Loop Operations. Appendices.

### CALIFORNIA, UNIV. OF, LOS ANGELES, CA

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS. Progress Report Of Field Experiments At A Humid Region Site, Beltsville, Maryland.

### CALIFORNIA, UNIV. OF, SAN DIEGO, CA

NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.

NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Function And Task Analysis.

### CALIFORNIA, UNIV. OF, SANTA BARBARA, CA

NUREG/CR-6327: MODELS FOR EMBRITTLEMENT RECOVERY DUE TO ANNEALING OF REACTOR PRESSURE VESSEL STEELS.

### CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

NUREG/CR-6283: FIELD SITE INVESTIGATION: EFFECT OF MINE SEISMICITY ON GROUNDWATER HYDROLOGY.

### CENTRAL RESEARCH INSTITUTE OF ELECTRIC POWER INDUSTRY

NUREG/CR-6235: ASSESSMENT OF SHORT THROUGH-WALL CIRCUMFERENTIAL CRACKS IN PIPES. Experiments And Analysis, March 1990 - December 1994.

### GEORGE WASHINGTON UNIV., WASHINGTON, DC

NUREG/CR-6287: MANAGEMENT CONCEPTS AND SAFETY APPLICATIONS FOR NUCLEAR FUEL FACILITIES.

### IDAHO NATIONAL ENGINEERING LABORATORY

NUREG/CR-5229 V07: FIELD LYSIMETER INVESTIGATIONS: LOW-LEVEL WASTE DATA BASE DEVELOPMENT PROGRAM FOR FISCAL YEAR 1994. Annual Report.

NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

NUREG/CR-6116 V10: SYSTEMS ANALYSIS PROGRAMS FOR HANDS-ON INTEGRATED RELIABILITY EVALUATIONS (SAPHIRE) VERSION 5.0. Data Loading Manual.

NUREG/CR-6256 V01: FIELD LYSIMETER INVESTIGATIONS - TEST RESULTS. Low-Level Waste Data Base Program. Test Results For Fiscal Years 1986, 1987, 1988, And 1989.

**INSTITUTE FOR CIRCADIAN PHYSIOLOGY**

NUREG/CR-6046: ALERTNESS, PERFORMANCE, AND OFF-DUTY SLEEP ON 8-HOUR AND 12-HOUR NIGHT SHIFTS IN A SIMULATED CONTINUOUS OPERATIONS CONTROL ROOM SETTING.

**KOREA INSTITUTE OF NUCLEAR SAFETY**

NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.

**LAWRENCE LIVERMORE NATIONAL LABORATORY**

NUREG/CR-5657: AUTOCASK (AUTOMATIC GENERATION OF 3-D CASK MODELS). A Microcomputer Based System For Shipping Cask Design Review Analysis.  
NUREG/CR-6322: BUCKLING ANALYSIS OF SPENT FUEL BASKET.

**MARYLAND, UNIV. OF, COLLEGE PARK, MD**

NUREG/CR-4918 V08: CONTROL OF WATER INFILTRATION INTO NEAR SURFACE LLW DISPOSAL UNITS. Progress Report Of Field Experiments At A Humid Region Site, Beltsville, Maryland.

**MODELING & COMPUTER SERVICES**

NUREG/CR-6327: MODELS FOR EMBRITTELEMENT RECOVERY DUE TO ANNEALING OF REACTOR PRESSURE VESSEL STEELS.

**OAK RIDGE NATIONAL LABORATORY**

NUREG/CR-0200 V1 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Control Modules.  
NUREG/CR-0200 V2P1R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Functional Modules F1-F8.  
NUREG/CR-0200 V2P2R4: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Functional Modules F9-F16.  
NUREG/CR-0200 V3 R04: SCALE: A MODULAR CODE SYSTEM FOR PERFORMING STANDARDIZED COMPUTER ANALYSES FOR LICENSING EVALUATION. Miscellaneous.  
NUREG/CR-4219 V10 N2: HEAVY-SECTION STEEL TECHNOLOGY PROGRAM. Semiannual Progress Report For April-September 1993.  
NUREG/CR-5591 V05 N1: HEAVY-SECTION STEEL IRRADIATION PROGRAM. Semiannual Progress Report For September 1993 Through March 1994.

NUREG/CR-5857: AGING OF TURBINE DRIVES FOR SAFETY-RELATED PUMPS IN NUCLEAR POWER PLANTS.

NUREG/CR-6016: AGING AND SERVICE WEAR OF AIR-OPERATED VALVES USED IN SAFETY-RELATED SYSTEMS AT NUCLEAR POWER PLANTS.

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS. Primer And User's Guides. Version 1.8.3 September 1994.

NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS. Reference Manuals. Version 1.8.3 September 1994.

NUREG/CR-6318: DATA SUMMARY REPORT FOR FISSION PRODUCT RELEASE TEST VI-7.

**PACIFIC SCIENCE & ENGINEERING GROUP, INC.**

NUREG/CR-6125 V01: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Human Error And Critical Tasks In Remote Afterloading Brachytherapy And Approaches For Improved System Performance.

NUREG/CR-6125 V02: HUMAN FACTORS EVALUATION OF REMOTE AFTERLOADING BRACHYTHERAPY. Function And Task Analysis.

**PRINCETON UNIV., PRINCETON, NJ**

NUREG/CR-6114 V02: AUXILIARY ANALYSES IN SUPPORT OF PERFORMANCE ASSESSMENT OF A HYPOTHETICAL LOW-LEVEL WASTE FACILITY. Two-Phase Flow And Contaminant Transport In Unsaturated Soils With Application To Low-Level Radioactive Waste Disposal.

**SANDIA NATIONAL LABORATORIES**

NUREG/CR-6109: THE PROBABILITY OF CONTAINMENT FAILURE BY DIRECT CONTAINMENT HEATING IN SURRY.

NUREG/CR-6119 V01: MELCOR COMPUTER CODE MANUALS. Primer And User's Guides. Version 1.8.3 September 1994.

NUREG/CR-6119 V02: MELCOR COMPUTER CODE MANUALS. Reference Manuals. Version 1.8.3 September 1994.

**SWEDEN, GOVT. OF**

NUREG/CR-6300: REFINEMENT AND EVALUATION OF CRACK-OPENING-AREA ANALYSES FOR CIRCUMFERENTIAL THROUGH-WALL CRACKS IN PIPES.

**THE KEVRIC COMPANY, INC.**

NUREG/CR-6287: MANAGEMENT CONCEPTS AND SAFETY APPLICATIONS FOR NUCLEAR FUEL FACILITIES.

## International Organization Index

This index lists, in alphabetical order, the countries and performing organizations that prepared the NUREG/IA reports listed in this compilation. Listed below each country and performing organization are the NUREG/IA numbers and titles of their reports. If further information is needed, refer to the main citation by the NUREG/IA number.

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## Licensed Facility Index

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