UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

January 9, 2004

The Honorable Nils J. Diaz
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Diaz:

SUBJECT: SUMMARY REPORT - 508th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, DECEMBER 3-5, 2003, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 508th meeting, December 3-5, 2003, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letters, and memoranda:

REPORTS:

Reports to Nils J. Diaz, Chairman, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Final Rule Revising 10 CFR 50.48, "Fire Protection," to Permit Licensees to Voluntarily Adopt Fire Protection Requirements Contained in National Fire Protection Association Standard 805 (NFPA 805), dated December 12, 2003

- Security of Nuclear Facilities (Secret), dated December 15, 2003

LETTERS:

Letters to William D. Travers, Executive Director for Operations, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft NUREG-0800, Standard Review Plan (SRP), Chapter 18.0, Human Factors Engineering, dated December 12, 2003

- Draft 10 CFR Part 52 Construction Inspection Program Framework Document, dated December 12, 2003

MEMORANDA:

Memoranda to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS:

- Proposed Revisions to Regulatory Guides, dated December 9, 2003
- Proposed Rule: Fitness for Duty Programs, 10 CFR Part 26, dated December 10, 2003

HIGHLIGHTS OF KEY ISSUES

1. Safeguards and Security Matters (Closed)

The Committee discussed the Safeguards and Security matters.

Committee Action

The Committee issued a report to the NRC Chairman on this matter dated December 15, 2003.

2. Draft Final 10 CFR Part 52 Construction Inspection Program Framework

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding the draft 10 CFR Part 52 construction inspection program (CIP) document, and the staff's resolution to public comments. The staff developed the draft framework document to provide guidance for revising the construction inspection manual chapters and inspection procedures to support the 10 CFR Part 52 licensing process. The objectives of this revision are to address programmatic weaknesses in the NRC construction inspection program that had been identified during the licensing of several plants. The guidance includes a "sign-as-you-go" phased verification process, which will document conclusions on individual inspections, tests, analyses, and acceptance criteria (ITAAC) as they are completed. It also includes an electronic information tracking and scheduling system to track all inspection findings, conclusions, and any unresolved items. The Nuclear Energy Institute is supporting the staff in its development of the draft CIP document and plans to have future interactions with the staff regarding this matter.

The NRC staff has realized that it will have insufficient resources to determine that all ITAAC items have been satisfied to the desired level of confidence, and, therefore, is proposing to implement a statistical sampling process to limit the number of inspections required.

Committee Action

The Committee issued a letter to the NRC Executive Director for Operations on this matter, dated December 12, 2003, concluding that the framework document provides a good basis for the development of appropriate inspection manual chapters for the certification and licensing of new plant designs. The Committee also agreed with the staff that the use of statistical sampling to limit the number of required ITAAC inspections will be valid in only a few areas. The Committee concluded that the number of ITAACs that are subjected to minimal inspection

should be small.

3. Proposed Revisions to SRP Chapter 18.0, Human Factors Engineering

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding proposed revisions to Standard Review Plan (SRP) Chapter 18.0, Human Factors Engineering. These revisions provide the framework for the conduct of human factors engineering reviews for nuclear power plants. For more detailed guidance concerning the review process, the SRP references NUREG-0711, "Human Factors Engineering Program Review Model." For review criteria that are specifically tailored to the review of plant modifications and license amendment requests involving credited operator actions, the SRP references NUREG-1764, "Guidance for the Review of Changes to Operator Actions." For guidance concerning human-system interfaces, the SRP and NUREG-0711 reference NUREG-0700, "Human-System Interface Design Review Guidelines."

Chapter 18.0, NUREG-0700, and NUREG-0711 are fundamental human factors review documents that have been revised to support reviews of advanced reactors and digital updates to existing control rooms. NUREG-1764 is a new document that provides means to use risk information to determine the appropriate level of human factors review.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter dated December 12, 2003, concluding that the update to Chapter 18.0 of the SRP and the documents referenced properly incorporate needed changes that facilitate anticipated reviews and clarify the human factors engineering review process.

4. Draft Final Revision to 10 CFR 50.48 to Endorse NFPA 805

The Committee heard presentations by and held discussions with the NRC staff regarding the draft final rule amending 10 CFR 50.48 to permit a licensee to voluntarily adopt National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants," as an alternative to the existing fire protection requirements of 10 CFR 50.48(b). Current fire protection requirements, which are deterministic, were developed before the NRC staff or the industry had the benefit of fire PRAs and recent advances in fire modeling. NFPA 805 Standard, developed by NFPA in coordination with the NRC staff, specifies the minimum fire protection requirements for existing LWR plants during all phases of plant operations, including shutdown and decommissioning. The Standard describes a method for using risk-informed and performance-based approaches and fundamental fire protection design elements for establishing adequate fire protection procedures, systems, and features. The staff believes that the methodology specified in the NFPA 805 Standard, with certain exceptions noted in the draft final revision to 10 CFR 50.48, is an acceptable approach for satisfying existing fire protection requirements. In addition, the implementation of the performance-based alternative in NFPA 805 Standard would result in a reduction in future regulatory interactions associated with requests for license exemptions and deviations related to fire protection changes.

Committee Action

The Committee issued a report to the NRC Chairman dated December 12, 2003, recommending that the final rule amending 10 CFR 50.48 to permit licensees to voluntarily adopt fire protection requirements contained in NFPA 805 Standard be issued. Also, the Committee agreed with the staff's proposal to work cooperatively with the industry to develop detailed guidance for implementing a risk-informed and performance-based fire protection program in accordance with NFPA 805.

5. Recent Operating Events

The Committee, in its efforts to continue awareness of recent operating events, briefly discussed the large number of scrams caused by problems beyond the main generator breaker, a failure to scram event at the Sequoyah plant, shadow corrosion and fuel channel bowing, and stability issues related to the oscillation power range monitors at the BWR plants. The Committee noted that in the four month period, July 4, 2003-November 11, 2003, of the 17 automatic scrams experienced, 8 were the result of interruption of feedwater supply. Of the 9 manual scrams during this period, two were caused by interruption of the feedwater supply. This possible trend will be monitored.

Committee Action

This was an information briefing. No Committee action was taken. The Committee may provide a letter report to the EDO in the future.

6. Subcommittee Report on the Interim Review of the License Renewal Application for the Virgil C. Summer Nuclear Station

The Plant License Renewal Subcommittee Chairman provided a report to the Committee on the Subcommittee's review of the license renewal application for the Virgil C. Summer Nuclear Station and the associated NRC staff's draft Safety Evaluation Report (SER). He stated that V.C. Summer is a three-loop Westinghouse PWR with a rated power level of 2900 MWt and it is located near Columbia, SC. The current license expires on August 6, 2022. In 1994, the applicant had replaced the steam generators. During the Subcommittee meeting, the applicant discussed the hot leg nozzle weld cracking and the corrective actions as well as the results of the inspections of the reactor vessel upper and lower heads. The NRC staff provided information on one-time inspections, time limited aging analyses, and results of the inspections. There were no open or confirmatory items documented in the draft SER. The staff plans to submit the final SER to the ACRS in April 2004.

Committee Action

This was an information briefing. No Committee action was taken at this time. The Committee plans to review the final SER during its May 6-8, 2004 meeting and provide a report to the Commission.

7. Draft Report on the NRC Safety Research Program

The Committee discussed the draft ACRS report to the Commission on the NRC Safety Research Program.

Committee Action

The Committee plans to continue its discussion of this report during its February 5-7, 2004 meeting.

8. Election of ACRS Officials

The Committee re-elected Mario V. Bonaca as ACRS Chairman, Graham B. Wallis as ACRS Vice Chairman, and Stephen L. Rosen as Member-at-Large for the Planning and Procedures Subcommittee for 2004.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the response from the EDO dated November 7, 2003, to the ACRS report dated September 22, 2003, concerning the Draft Final Regulatory Guide X.XXX, "An Approach for Determining the Technical Adequacy of PRA Results for Risk-Informed Activities" (formerly DG-1122). The Committee decided that it was satisfied with the EDO's response.

  The Committee would like to review the new regulatory guide (or NUREG) on sensitivity and uncertainty analyses. The Committee would like to be kept informed of the insights, lessons learned, and changes to be made to the Guide after the initial trial use period.

- The Committee considered the response from the EDO dated November 7, 2003, to the ACRS report dated September 24, 2003, concerning the Review Standard for Extended Power Uprates. The Committee decided that it was satisfied with the EDO's response.

- The Committee considered the response from the EDO dated November 21, 2003, to the ACRS report dated September 24, 2003, concerning the Proposed Recommendations for Resolving Generic Issue-186, "Potential Risk and Consequences of Heavy Load Drops in Nuclear Power Plants." The Committee decided that it was satisfied with the EDO's response.

  The Committee would like to be kept informed of the enhancements to the NRC guidance documents and decisions in response to the recommendations proposed by RES for resolving Generic Issue-186.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from November 6, 2003, through December 3, 2003, the following Subcommittee meetings were held:

- Thermal-Hydraulic Phenomena - November 19-20, 2003

The Subcommittee discussed the ongoing development by the Office of Nuclear Regulatory Research of the TRAC/RELAP Advanced Computational Engine (TRACE). This is an advanced nuclear reactor thermal-hydraulic systems analysis computer code, which is intended to replace several other, more specialized reactor analytical tools.

- Regulatory Policies & Practices - November 21, 2003

The Subcommittee discussed the "LOCA failure analysis and frequency estimation" developed by the staff in response to the Commission's March 31, 2003, Staff Requirements Memorandum on recommendations for risk informed changes to 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors."

- Human Factors - December 2, 2003

The Subcommittee reviewed the updates to draft Standard Review Plan Chapter 18, "Human Factors Engineering."

- Plant License Renewal (V.C. Summer) - December 3, 2003

The Subcommittee reviewed the V. C. Summer Nuclear plant license renewal application and the NRC staff's draft Safety Evaluation Report.

- Planning and Procedures - December 3, 2003

The Subcommittee discussed proposed ACRS activities, practices, and procedures for conducting Committee business and organizational and personnel matters relating to ACRS and its staff.

LIST OF MATTERS FOR THE ATTENTION OF THE EDO

- The Committee would like to be briefed on the results of the NRR testing of the method developed by the staff using risk-importance measures to screen licensee submissions for human factors review.

- The Committee would like to have an opportunity to review the draft final revision to 10 CFR Part 26, "Fitness for Duty Programs" after reconciliation of public comments.

- In the future, the Committee would prefer to review proposed Regulatory Guides and any associated rulemaking as a package.

- The Committee would like to have an opportunity to review draft final revisions to the following Regulatory Guides after reconciliation of public comments:
  - Revision 33 to Regulatory Guide 1.84 (DG-1124), "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III"
  - Revision 14 to Regulatory Guide 1.147, (DG-1125), "Inservice Inspection Code Case Acceptability, ASME Section XI"
  - Revision 1 to Regulatory Guide 1.193 (DG-1126), "ASME Code Cases Not Approved for Use"

PROPOSED SCHEDULE FOR THE 509th ACRS MEETING

The Committee agreed to consider the following topics during the 509th ACRS meeting, to be held on February 5-7, 2004:

- Resolution of Certain Items Identified by the ACRS in NUREG-1740 Related to the DPO on Steam Generator Tube Integrity
- NRC Safety Research Program Report
- Strategy and Metrics for Evaluating the Effectiveness (Quality) of the NRC Safety Research Programs
- ESBWR Design-Thermal Hydraulic Issues
- Subcommittee Report on the ACR-700 Design

Sincerely,

Mario V. Bonaca
Chairman

CERTIFIED

Date Issued: 1/13/2004
Date Certified: 1/23/2004

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DECEMBER 3-5, 2003

REPORT:

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- Security of Nuclear Facilities (Secret) dated December 15, 2003

LETTERS:

The following letters to William D. Travers, Executive Director for Operations, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft NUREG-0800, Standard Review Plan (SRP), Chapter 18.0, Human Factors Engineering dated December 12, 2003

- Draft 10 CFR Part 52 Construction Inspection Program Framework Document dated December 12, 2003

MEMORANDA:

The following memoranda to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS:

- Proposed Revisions to Regulatory Guides dated December 9, 2003

- Proposed Rule: Fitness for Duty Programs, 10 CFR Part 26 dated December 10, 2003

APPENDICES

CERTIFIED

MINUTES OF THE 508th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS DECEMBER 3-5, 2003 ROCKVILLE, MARYLAND

The 508th meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held in Conference Room 2B3, Two White Flint North Building, Rockville, Maryland, on December 3-5, 2003. Notice of this meeting was published in the *Federal Register* on November 21, 2003 (65 FR 65743) (Appendix I). The purpose of this meeting was to discuss and take appropriate action on the items listed in the meeting schedule and outline (Appendix II). The meeting was open to public attendance. There were no written statements or requests for time to make oral statements from members of the public regarding the meeting.

A transcript of selected portions of the meeting is available in the NRC's Public Document Room at One White Flint North, Room 1F-19, 11555 Rockville Pike, Rockville, Maryland. Copies of the transcript are available for purchase from Neal R. Gross and Co., Inc. 1323 Rhode Island Avenue, NW, Washington, DC 20005. Transcripts are also available at no cost to download from, or review on, the Internet at http://www.nrc.gov/ACRS/ACNW.

ATTENDEES

ACRS Members: ACRS Members: Dr. Mario V. Bonaca (Chairman), Dr. Graham B. Wallis (Vice Chairman), and Mr. Stephen L. Rosen, (Member-at-Large), Dr. George E. Apostolakis, Dr. F. Peter Ford, Dr. Thomas S. Kress, Mr. Graham M. Leitch, Dr. Dana A. Powers, Dr. Victor H. Ransom, Dr. William J. Shack, and Mr. John D. Sieber. For a list of other attendees, see Appendix III.

I. Chairman's Report (Open)

[Note: Dr. John T. Larkins was the Designated Federal Official for this portion of the meeting.]

Dr. Mario V. Bonaca, Committee Chairman, convened the meeting at 8:30 a.m. and reviewed the schedule for the meeting. He summarized the agenda topics for this meeting and discussed the administrative items for consideration by the full Committee.

II. Draft Report on the NRC Safety Research Program (Open)

[Note: Mr. Sam Duraiswamy was the Designated Federal Official for this portion of the meeting.]

The Committee discussed the draft ACRS report to the Comrnission on the NRC Safety Research Program.

Committee Action

The Committee plans to continue its discussion of this report which is due to the Commission on March 15, 2004.

III. Draft Final 10 CFR Part 52 Construction Inspection Program Framework (Open)

[Note: Dr. Medhat El-Zeftawy was the Designated Federal Official for this portion of the meeting.]

Dr. Thomas S. Kress, Future Plant Designs ACRS Subcommittee Chairman, stated that the purpose of this session was to hear presentations by and hold discussions with representatives of the NRC staff regarding draft 10 CFR Part 52 construction inspection program (CIP) document, and the staff's resolution to public comments. The staff has developed the draft framework document to provide guidance for the revision of construction inspection manual chapters and inspection procedures to support the 10 CFR Part 52 licensing process.

Ms. Mary Ann Ashley, CIP team leader, Office of Nuclear Reactor Regulation (NRR), stated that the objectives of the CIP revision were to address programmatic weaknesses in the NRC construction inspections that had been identified during the licensing of several plants. The guidance includes a "sign-as-you-go" phased verification process, which will document conclusions on individual inspections, tests, analyses, and acceptance criteria (ITAAC) as they are completed. It also includes an electronic information tracking and scheduling system to track all inspection findings, conclusions, and any unresolved items.

The CIP has four phases. The first phase supports a licensing decision for an early site permit (ESP), the second phase supports issuance of a combined license (COL), and the third and fourth phases support construction activities and preparations for operations.

10 CFR Part 52 describes a combined licensing process, an ESP process, and a standard plant design certification process. The CIP manual chapters provide guidance for the ESP and COL processes. The 10 CFR Part 52 CIP is essentially an updated revision of the older NRC construction inspection program previously used to inspect all light water reactors under 10 CFR Part 50. The old program consisted of five inspection manual chapters. The revised CIP modifies each of these manual chapters to incorporate the applicable requirements of 10 CFR Part 52. The five inspection manual chapters are as follows:

- IMC-2500, "Inspection Program for Part 52 Licenses," (has not been issued). This will provide guidance for developing and implementing inspection activities to support the review of ESPs and COLs in accordance with Part 52.

- IMC-2501, "Early Site Permit," was issued on October 8, 2002. It is implemented when the NRC is formally notified that an applicant is preparing an application for an ESP or a COL.

- IMC-2502, "Pre-Combined License (Pre-COL) Phase," will provide guidance for inspection activities from the time the NRC is notified of a person's intent to apply for a COL, through the receipt of an application for a COL, to the mandatory hearing that leads to the Commission's decision.

- IMC-2503, "Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)," provides guidance for inspection activities to support the staff's review of the licensee's claim that ITAAC has been met.

- IMC-2504, "Preparations for Operations," provides guidance for inspection activities for the requirements of 10 CFR Part 52 and the pre-operational testing phase.

IMC-2503 and IMC-2504 could be done in parallel and could start at placement of contracts for major component and module manufacturing. However, IMC-2503 ends at fuel load. The draft CIP document was issued for public comment on May 30, 2003. The public comment period ended on October 30, 2003.

Mr. Russ Bell, Nuclear Energy Institute (NEI), is supporting the staff in its effort to develop the draft CIP document and plans to have future interactions with the staff regarding this matter.

The NRC staff has realized that it will have insufficient resources to inspect all ITAAC in detail, and is proposing to implement a statistical sampling process to limit the number of inspections required to determine that all ITAAC have been satisfied to the desired level of confidence.

Committee Action

The Committee issued a letter to the NRC Executive Director for Operations on December 12, 2003, concluding that the framework document provides a good basis for the development of appropriate inspection manual chapters for the certification and licensing of new plants. The Committee also agreed with the staff that the use of statistical sampling to limit the number of required ITAAC inspections will be valid only in few areas. The Committee concluded that the number of ITAACs that are subjected to minimal inspection should be small.

IV. Proposed Revisions to SRP Chapter 18, Human Factors Engineering (Open)

[Note: Dr. Medhat El-Zeftawy was the Designated Federal Official for this portion of the meeting.]

Mr. Stephen Rosen, ACRS Human Factors Subcommittee Chairman, stated that the purpose of this meeting was to hear a briefing by representatives of the NRC staff regarding the recent updates to draft NUREG-0800, Standard Review Plan Chapter (SRP) 18.0, "Human Factors Engineering." Mr. Rosen also indicated that the ACRS Human Factors Subcommittee held a meeting on December 2, 2003 to discuss this matter. During this meeting, Mr. Robert Fuld (a member of the public) expressed concern regarding NUREG-0711, "Human Factors Engineering Program Review Model." Mr. Fuld's concern is related to the lengthy details outlined in NUREG-0711 and the making or incorporation of NUREG-0711 as part of the Federal Regulations.

Mr. Julius Persensky, Office of Nuclear Regulatory Research (RES), stated that Chapter 18.0 of the SRP provides the framework for the conduct of human factors engineering reviews for nuclear power plants. For more detailed guidance concerning the review process, the SRP references NUREG-0711. For review criteria that are specifically tailored to the review of plant modifications and license amendment requests involving credited operator actions, the SRP references NUREG-1764, "Guidance for the Review of Changes to Operator Actions." For guidance concerning human-system interfaces, the SRP and NUREG-0711 reference NUREG-0700, "Human-System Interface Design Review Guidelines."

Mr. James Bongarra, NRR, indicated that Chapter 18.0, NUREG-0700, and NUREG-0711 are fundamental human factors review documents and they have been revised to support reviews of advanced reactors and digital updates to existing control rooms. NUREG-1764 is a new document that provides means to use risk information to determine the appropriate level of human factors review.

Mr. Paul Lewis, RES, outlined specific changes in the above documents as follows:

- NUREG-0800, SRP Chapter 18 was revised to: 1) make its format consistent with the format of NUREG-0711; 2) provide guidance for the review of human factors engineering (HFE) aspects of new plants, control room modifications, and modifications affecting risk-important human actions; and, 3) provide guidance for a risk-informed, graded approach to human factors engineering reviews of changes to human actions.

- NUREG-0711 was revised to: 1) make it applicable to all human factors reviews, not just advanced reactors; 2) make it a single source of review procedures; and, 3) to update the technical content of the individual elements to reflect the current state-of-the-art.

- NUREG-0700 was revised to: 1) address important human-system interaction topics, such as controls and computer-based procedures; and 2) limit its content to human-system interaction review guidelines and not the review process.

Ms. Susan Cooper, RES, stated that NUREG-1764 is a new document developed to: 1) provide a risk-informed screening method as a graded approach to human factors reviews that are commensurate with the risk importance of the human actions; and 2) consolidate in one document review guidance for changes to credited human actions. Ms. Cooper indicated that the staff's review of license amendments and actions involving plant changes that affect important human actions uses a graded, risk-informed approach in conformance with Regulatory Guide 1.174. The staff's review uses a two-phase approach. The first phase is a screening analysis to determine the risk associated with the plant modification and its associated human actions using both quantitative and qualitative information. Plant modifications and human actions are categorized into regions of high, medium, and lower risk. This categorization is used to determine the level of human factors engineering review needed. Changes that involve more risk-significant human actions receive a detailed review, while those of moderate risk significance receive a less detailed review, and the human actions in the lowest risk region receive minimal human factors engineering review.

The ACRS, in its letter of November 13, 1995 regarding NUREG-0700, Revision 1, expressed two concerns: 1) that the detailed human system interaction design review guidance in Part 2 may discourage the approval of other, equally acceptable alternatives; and 2) that the guidelines in Part 2 will become de facto regulations. This matter was also discussed during the Human Factors Subcommittee meeting held on December 2, 2003.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter dated December 12, 2003, concluding that the update to Chapter 18.0 of the SRP and the documents referenced properly incorporate needed changes that facilitate anticipated reviews and clarify the human factors engineering review process.

V. Draft final Revision to 10 CFR 50.48 to Endorse NFPA 805 Fire Protection Standard (Open)

[Note: Mr. Marvin D. Sykes was the Designated Federal Official for this portion of the meeting.]

The ACRS heard presentations from the staff on the draft final rule amending 10 CFR 50.48 which would permit existing reactor licensees to voluntarily adopt fire protection requirements contained in National Fire Protection Association Standard 805 (NFPA 805), "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants," 2001 Edition, as an alternative to the existing deterministic fire protection requirements. The standard specifies the minimum fire protection requirements for existing light-water nuclear power plants during all phases of plant operations, shutdown, and decommissioning. The standard also describes a method for the use of risk-informed, performance-based approaches and fundamental fire protection design elements for establishing adequate fire protection procedures, systems, and features.

The staff provided a detailed discussion of the proposed rule and representatives of NEI provided comments on the industry perspective on the draft final rule. Staff projections indicate that the implementation of this performance-based alternative would result in a reduction in future regulatory interactions associated with requests for license exemptions and deviations related to fire protection changes. It would also allow licensees and the staff to focus their attention and resources on the most risk-significant fire protection equipment and activities through more flexible, efficient, and rational processes.

Since NFPA 805 primarily addresses technical issues and does not provide a framework or guidance pertaining to the regulatory process for plants choosing to adopt NFPA 805. The Committee also agreed that the staff should continue their efforts to work cooperatively with the industry to develop detailed guidance for the implementation of a risk-informed, performance-based fire protection program in accordance with NFPA 805.

The Committee noted that the methodology in NFPA 805, with certain exceptions noted in the proposed rule language, is an acceptable approach for satisfying existing fire protection requirements. The Committee also agreed with the staff that the draft final rule should be issued to permit licensees to voluntarily adopt fire protection requirements contained in NFPA 805. The guide is also expected to provide supplemental technical guidance and methods for demonstrating compliance with fire protection requirements.

Committee Action

The Commission issued a report to the NRC Chairman on this matter, dated December 12, 2003.

VI. Subcommittee Report on the Interim Review of the License Renewal Application for the Virgil C. Summer Nuclear Station (Open)

[Note: Mr. Marvin D. Sykes was the Designated Federal Official for this portion of the meeting.]

The Plant License Renewal Subcommittee Chairman, Mr. Graham Leitch, updated the Committee on the Plant License Renewal Subcommittee meeting which was held December 3, 2003. The purpose of the Subcommittee meeting was to hear presentations from South Carolina Electric and Gas Company (SCE&G) the applicant, and the NRR staff on the license renewal application and associated draft safety evaluation report for the V.C. Summer Nuclear Station. The Summer plant is a three-loop Westinghouse pressurized-water reactor rated at 2900 MWt or approximately 1000 MWe, located near Columbia, South Carolina. The initial operating license was granted August 6, 1982 and license expires August 6, 2022.

The presenters from SCE&G emphasized that the license renewal application was developed and formatted to comply with the Generic Aging Lessons Learned (GALL) report and summarized the key elements of their presentation which included the plant operating history, material condition, development of the license renewal application, and commitment tracking. The applicant's presentation focused on the scoping methodology, the establishment of

effective aging management programs, and the system for tracking commitments related to license renewal. The applicant also provided a discussion on the use of one-time inspections to determine the extent of the aging effects and the need for future inspection activities when there were no known aging effects or they were presumed to progress slowly.

SCE&G also highlighted that the Summer site groundwater was mildly acidic with a pH below 5.5 and is considered aggressive. The staff and applicant discussed additional provisions to be added to the existing plant programs and procedures to monitor the potential aging effects.

Presenters from NRR discussed the status of the ongoing review of the application and the draft safety evaluation report. There were no open or confirmatory items identified in the draft safety evaluation report. The staff also discussed the results of on-site inspections and audits aimed at evaluating the applicant's scoping methodology and the effectiveness of existing and planned aging management programs, as well as the assertions that programs were consistent with GALL. Overall, the staff concluded that the applicant had successfully identified equipment and structures needing aging management review and that the existing aging management programs met the requirements of 10 CFR 54.

The NRC staff is scheduled to complete their review of the V. C. Summer License Renewal Application and issue the final safety evaluation report by April 2004. The Committee is scheduled to hear discussions from the applicant and staff during the May 2004 ACRS meeting.

Committee Action

None at this time. The Committee will continue to follow the progress of this matter and possibly provide a letter report to the Commission.

VII. Election of ACRS Officers (Open)

[Note: Dr. John T. Larkins was the Designated Federal Official for this portion of the meeting.]

The Committee re-elected Mario V. Bonaca as ACRS Chairman, Graham B. Wallis as ACRS Vice Chairman, and Stephen L. Rosen as ACRS Member-at-Large for the Planning and Procedures Subcommittee for 2004.

X. Executive Session (Open)

[Note: Dr. John T. Larkins was the Designated Federal Official for this portion of the meeting.]

A. Reconciliation of ACRS Comments and Recommendations/EDO Commitments (Open)

[Note: Mr. Sam Duraiswamy was the Designated Federal Official for this portion of the meeting.]

The Committee discussed the response from the NRC Executive Director for Operations (EDO) to ACRS comments and recommendations included in recent ACRS reports:

- The Committee considered the response from the EDO dated November 11, 2003, to the ACRS report dated September 22, 2003, concerning the Draft Final Regulatory Guide X.XXX, "An Approach for Determining the Technical Adequacy of PRA Results for Risk-Informed Activities" (formerly DG-1122).

  The Committee decided that it was satisfied with the EDO's response.

- The Committee considered the response from the EDO dated November 7, 2003, to the ACRS report dated September 24, 2003, concerning the Review Standard for Extended Power Uprates.

  The Committee decided that it was satisfied with the EDO's response.

- The Committee considered the response from the EDO dated November 21, 2003, to the ACRS report dated September 24, 2003, concerning the Proposed Recommendations for Resolving Generic Issue-186, "Potential Risk and Consequences of Heavy Load Drops in Nuclear Power Plants."

  The Committee decided that it was satisfied with the EDO's response.

B. Report on the Meeting of the Planning and Procedures Subcommittee (Open)

The Committee heard a report from the ACRS Chairman and the Executive Director, ACRS, regarding the Planning and Procedures Subcommittee meeting held on December 3, 2003. The following items were discussed:

Review of the Member Assignments and Priorities for ACRS Reports and Letters for the December ACRS meeting

Member assignments and priorities for ACRS reports and letters for the December ACRS meeting were discussed. Reports and letters that would benefit from additional consideration at a future ACRS meeting were also discussed.

Anticipated Workload for ACRS Members

The Subcommittee discussed anticipated workload for ACRS members through March 2004. The objectives were:

- Review the reasons for the scheduling of each activity and the expected work product and to make changes, as appropriate
- Manage the members' workload for these meetings

- Plan and schedule items for ACRS discussion of topical and emerging issues

During this session, the Subcommittee also discussed and developed recommendations on items included in the Future Activities List.

Staff Requirements Memorandum Resulting from the ACRS Meeting with the NRC Commissioners

The ACRS met with the NRC Commissioners on Thursday, October 2, 2003, to discuss various items of mutual interest. A Staff Requirements Memorandum (SRM) dated October 31, 2003, resulting from this meeting was discussed. In the SRM, the Commission stated:

- The ACRS should identify, as part of its normal review of advanced reactor designs, those features, approaches, and common phenomenology that could be applied to operating reactors to enhance safety, resolve issues or streamline future activities.

- In the security arena, the ACRS should continue to focus its attention and expertise on technical issues associated with the progression and potential consequences of postulated terrorist actions, and the assessment of the effectiveness of mitigation strategies. The ACRS should not involve itself in issues associated with threat assessment (i.e., assessments of the likelihood of various types of events), physical security, or force-on-force assessments since these are outside the Committee's area of expertise, and involve intelligence information not available to the Committee.

Regarding the first item, the Committee issued a report on the lessons learned from its review of the General Electric ABWR and CE System 80+ designs. Dr. Kress, the Chairman of the Subcommittee on Future Plant Designs, suggested that the Committee follow the same approach used by the ACRS previously. Accordingly, after completing the design certification review of the AP1000 in 2004, Dr. Kress plans to prepare a lessons learned report and submit it to the Committee for consideration.

Regarding the second item, a list of near-term ACRS safeguards and security activities and the associated schedules were provided to the Committee during the September 2003 ACRS meeting. Also, during the October 2003 ACRS meetings, Dr. Bonaca discussed plans for FY 2004 and FY 2005 ACRS activities in the safeguards and security area.

The Commission direction in the SRM dated October 31, 2003 is consistent with the ACRS work scope that was established in the Committee's original May 2002 Task Plan. Dr. Bonaca had stated that he would revisit the plans for the FY 2004 and 2005 ACRS safeguards and security activities after the November 12-14 Safeguards and Security Subcommittee meeting at Sandia. Dr. Bonaca will meet as needed with the cognizant NRC staff to identify the topics that will benefit the most from ACRS involvement and discuss the matter with the Planning and Procedures Subcommittee.

ACRS Evaluation of RES Programs

RES has been charged by the EDO to establish a process to evaluate the effectiveness and utility of its programs. This evaluation is mandated by the Government Performance and Results Act and needs to be in place during FY 2004. Mr. Mayfield, RES, discussed this matter with the Committee during the September 2003 ACRS meeting to find out whether ACRS would be interested in undertaking this task. The Committee agreed to assist RES in assessing the effectiveness and utility of the NRC research programs.

Mr. Mayfield provided the ACRS/ACNW Executive Director a draft copy of the "Proposed Approach to ACRS Review of Research Quality," which was discussed by the Committee during its October 2003 meeting. Subsequently, Mr. Mayfield provided an update to the draft, based on conversations with the ACRS/ACNW Executive Director. The Committee was asked to review and provide feedback on this revised draft. The ACRS staff recommended that the rating scale be simplified (3 vs. 5 grades) and the metrics be reduced to remove redundancy. The ACRS staff prepared a proposed revision to the Plan outlining a strategy for use by the ACRS in reviewing the Quality of the RES Programs. It has been provided to Dr. Powers for consideration.

Response to SRM on Divergence and International Regulatory Approaches

Following the April 11, 2003, meeting between the ACRS and the Commission, an SRM was issued on April 28 stating that the ACRS should explore and consider other international regulatory approaches and where there are significant differences the Commission should be informed. The ACRS Executive Director tasked LINK Technologies to provide a proposed approach to respond to this SRM. LINK Technologies prepared a preliminary document addressing 18 regulatory topics and the approach taken by several countries to these topics. Subsequently, these topics were grouped into the following categories:

a) Safety Goals (land contamination)
b) Future Reactors (imposition of EPR findings on current reactors)
c) Accident Consequences:
    - ICRP 60 versus ICRP 30
    - Injuries
    - Linear No Threshold (LNT) hypothesis
d) License Renewal (10 year safety appraisal)
e) Risk-Informed Regulation
f) Safety Culture
g) Severe Accident Management Guidelines
h) Quantification of Severe Accidents

After review of the information provided by LINK, the ACRS Executive Director recommended that the Committee focus on selected hot-button issues as opposed to providing a long list of potential topics that may not be of interest to the Commission. It was suggested that the Committee issue a report on the divergence in regulatory approaches in the areas of materials

degradation, sump screen blockage, and the use of PRA in risk-informed regulatory decisionmaking in March or April 2004.

During the November 2003 ACRS meeting, Dr. Powers stated that he plans to prepare a proposed ACRS report on this matter and submit it to the Committee for consideration during the February or March 2004 ACRS meeting.

ACRS Retreat in 2004

During the November 2003 ACRS meeting, the Committee decided to hold the retreat on January 29-30, 2004, in Room T-2B3, Rockville, Maryland. The Committee also discussed a proposed list of topics for the retreat. As suggested by the Committee, Dr. Bonaca assigned lead members to each topic. Also, follow-up actions resulting from the 500th ACRS Meeting have been added to the list of topics.

Subcommittee Activities

As a part of the Planning and Procedures Subcommittee's planning activities, each Subcommittee Chairman should provide a listing of proposed and/or planned Subcommittee meetings for the next several months. To the extent possible, the Subcommittee Chairman should note the subject of the meeting, its objective, and projected outcome. The ACRS Chairman will take a few minutes during each meeting to go around the table and query each member on proposed and/or planned meetings.

Election of Officers for CY 2004

During the December 2003 ACRS meeting, the Committee will elect Chairman and Vice-Chairman for the ACRS and Member-at-Large for the Planning and Procedures Subcommittee. During the November ACRS meeting the members were notified that in accordance with the ACRS Bylaws, those members who do not wish to be considered for any or all of the offices should notify the ACRS Executive Director in writing by November 21, 2003. Three members did not wish to be considered for all of the offices, one member withdrew his name from consideration for the offices of Chairman and Vice Chairman, and one other member withdrew his name for the office of Chairman.

Risk-Informing 10 CFR 50.46

The ACRS Subcommittee on Regulatory Policies and Practices held a meeting on November 21, 2003, to discuss the staff's proposed approach for addressing the issues listed in the March 31, 2003 SRM and other related activities. The staff is in the process of developing a Commission paper on this matter, which is expected to be provided to the ACRS for review in the first quarter of 2004. Dr. Shack, Chairman of the Regulatory Policies and Practices, plans to provide a report to the Committee regarding the outcome of the November 21, 2003 Subcommittee meeting during the December ACRS meeting.

Meeting with the EDO and the NRC Office Directors

The ACRS staff is working with the EDO's Office to set up a meeting with the EDO, Deputy EDOs, and Office Directors in March. We should provide a proposed list of topics for discussion to the EDO in January. Topics proposed by the ACRS staff are as follows:

- PWR sump performance issues
- Thermal-hydraulic issues
- Proactive materials degradation program
- PRA quality
- Advanced Reactor Design review activities, including major issues and impediments encountered
- Items for ACRS review in the next 2 years
- Effectiveness of ACRS/NRC staff interactions
- ACRS contributions to the regulatory process

Member Issues

- Foreign Travel - The agency requires a six-week notice to process requests for foreign travel. For this reason as well as for budget planning purposes, members should advise the Executive Director of any plans for travel outside of the United States immediately.

- Travel Request - Dr. Bonaca requests Committee support and approval to attend the PSAM-7/ESREL '04 Conference to be held on June 14-18, 2004, in Berlin, Germany.

C. Future Meeting Agenda (Open)

Appendix IV summarizes the proposed items endorsed by the Committee for the 509th ACRS Meeting, February 5-7, 2004.

The 508th ACRS meeting was adjourned at 6:00 p.m. on December 5, 2003.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

January 13, 2004

MEMORANDUM TO: ACRS Members

FROM: Sherry Meador
Technical Secretary

SUBJECT: PROPOSED MINUTES OF THE 508th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS - DECEMBER 3-5, 2003

Enclosed are the proposed minutes of the 508th meeting of the ACRS. This draft is being provided to give you an opportunity to review the record of this meeting and provide comments. Your comments will be incorporated into the final certified set of minutes as appropriate, which will be distributed within six (6) working days from the date of this memorandum.

Attachment:
As stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

January 23, 2004

MEMORANDUM TO: Sherry Meador, Technical Secretary
Advisory Committee on Reactor Safeguards

FROM: Mario V. Bonaca
Chairman

SUBJECT: CERTIFIED MINUTES OF THE 508th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS), DECEMBER 3-5, 2003

I certify that based on my review of the minutes from the 508th ACRS full Committee meeting, and to the best of my knowledge and belief, I have observed no substantive errors or omissions in the record of this proceeding subject to the comments noted below.

Committee on Nuclear Waste (ACNW) to provide independent technical review of and advice on matters related to the management of nuclear waste, including all aspects of nuclear waste disposal facilities, as directed by the Commission. The ACNW undertakes independent studies and reviews related to disposal, storage, and transportation of both high- and low-level radioactive waste including interim storage of spent nuclear fuel; materials safety; and facilities decommissioning. This encompasses activities related to rulemakings, associated regulatory guides, and technical positions developed to support and clarify NRC's nuclear materials and radioactive waste regulations. Committee members are selected from a variety of engineering and scientific disciplines, such as risk assessment, chemistry, mechanical engineering, civil engineering, materials sciences, and the earth sciences. At this time, candidates are being sought who have 15–20 years of experience, including graduate level education, in the management and disposal of radioactive waste. Committee members serve a 4-year term with the possibility of reappointment for a total service of 8 years.

Criteria used to evaluate candidates include education and experience, demonstrated skills in nuclear waste management matters, and the ability to solve complex technical problems. The Commission, in selecting its Committee members, considers the need for a specific expertise to accomplish the work expected to be before the ACNW. For this position, the expertise must be directly related to the areas of radioactive waste disposal, site remediation and closure activities, materials degradation, corrosion of metals and alloys, and nuclear fuel cycle. Demonstrated experience would be particularly desirable in engineering design and risk assessment associated with underground structures, tunnels, and mining complexes, with emphasis in the area of radioactive waste storage and disposal. Consistent with the requirements of the Federal Advisory Committee Act, the Commission seeks candidates with diverse backgrounds, so that the membership on the Committee will be fairly balanced in terms of the points of view represented and functions to be performed by the Committee.

Candidates for ACNW appointments may be involved in or have financial interests related to NRC-regulated aspects of the nuclear industry. Because conflict-of-interest considerations may restrict the participation of a candidate in ACNW activities, the degree and nature of any such restriction on an individual's activities as a member will be considered in the selection process. Each qualified candidate's financial interests must be reconciled with applicable Federal and NRC rules and regulations prior to final appointment. This might require divestiture of securities or discontinuance of certain contracts or grants. Information regarding these restrictions will be provided upon request.

A resumé describing the educational and professional background of the candidate, including any special accomplishments and professional references should be provided. Candidates should provide their current address, telephone number, and e-mail address. All candidates will receive careful consideration. Appointment will be made without regard to such factors as race, color, religion, national origin, sex, age, or disabilities. Candidates must be citizens of the United States and be able to devote approximately 70–100 days per year to Committee business. Applications will be accepted until December 31, 2003.

Dated: November 17, 2003.

Andrew L. Bates,

Advisory Committee Management Officer.

[FR Doc. 03–29105 Filed 11–20–03; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards; Meeting Notice

In accordance with the purposes of Sections 29 and 182b. of the Atomic Energy Act (42 U.S.C. 2039, 2232b), the Advisory Committee on Reactor Safeguards (ACRS) will hold a meeting on December 3–6, 2003, 11545 Rockville Pike, Rockville, Maryland. The date of this meeting was previously published in the **Federal Register** on Monday, November 20, 2002 (67 FR 70094).

Wednesday, December 3, 2003, Conference Room T–2B3, Two White Flint North, Rockville, Maryland

1:30 p.m.–1:35 p.m.: Opening Remarks by the ACRS Chairman (Open)—The ACRS Chairman will make opening remarks regarding the conduct of the meeting.

1:35 p.m.–6:30 p.m.: Draft Report on the NRC Safety Research Program (Open)—The Committee will hold a discussion of the Draft ACRS report on the NRC Safety Research Program.

6:45 p.m.–7:15 p.m.: Preparation of ACRS Report (Closed)—The Committee will discuss proposed ACRS report on Safeguards and Security matters.

Thursday, December 4, 2003, Conference Room T–2B3, Two White Flint North, Rockville, Maryland

8:30 a.m.–8:35 a.m.: Opening Remarks by the ACRS Chairman (Open)—The ACRS Chairman will make opening remarks regarding the conduct of the meeting.

8:35 a.m.–10:30 a.m.: Draft Final 10 CFR Part 52 Construction Inspection Program Framework (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the draft final construction inspection program framework for advanced reactor designs and the staff's resolution of public comments.

10:45 a.m.–12:15 p.m.: Proposed Revisions to SRP Chapter 18, Human Factors Engineering (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the proposed revisions to the Standard Review Plan (SRP) Chapter 18, Human Factors Engineering.

1:15 p.m.–2:15 p.m.: Draft Final Revision to 10 CFR 50.48 to Endorse NFPA 805 Fire Protection Standard (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the draft final revisions to 10 CFR 50.48, which will permit licensees to adopt National Fire Protection Association (NFPA) 805 Standard, as an alternative to the existing fire protection requirements.

2:15 p.m.–3:15 p.m.: Recent Operating Events (Open)—The Committee will hear a briefing by and hold discussions with the cognizant ACRS member regarding significant recent operating events.

3:30 p.m.–7 p.m.: Preparation of ACRS Reports (Open/Closed)—The Committee will discuss proposed ACRS reports on matters considered during this meeting. In addition, the Committee will discuss a proposed ACRS report on safeguards and security matters (Closed).

Friday, December 5, 2003, Conference Room T–2B3, Two White Flint North, Rockville, Maryland

8:30 a.m.–8:35 a.m.: Opening Remarks by the ACRS Chairman (Open)—The ACRS Chairman will make opening remarks regarding the conduct of the meeting.

8:35 a.m.–9 a.m.: Subcommittee Report on the Interim Review of the License Renewal Application for the V. C.

Summer Nuclear Power Plant (Open)—The Committee will hear a report by and hold discussions with the Chairman of the ACRS Subcommittee on Plant License Renewal regarding the review of the V. C. Summer license renewal application and the staff's initial Safety Evaluation Report.

9 a.m.–10 a.m.: Future ACRS Activities/ Report of the Planning and Procedures Subcommittee (Open)—The Committee will discuss the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the full Committee during future meetings. Also, it will hear a report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments.

10:15 a.m.–10:30 a.m.: Reconciliation of ACRS Comments and Recommendations (Open)—The Committee will discuss the responses from the NRC Executive Director for Operations (EDO) to comments and recommendations included in recent ACRS reports and letters. The EDO responses are expected to be made available to the Committee prior to the meeting.

10:30 a.m.–11 a.m.: Election of ACRS Officers (Open)—The Committee will elect Chairman and Vice Chairman for the ACRS and Member-at-Large for the Planning and Procedures Subcommittee for 2004.

2 p.m.–7 p.m.: Preparation of ACRS Reports (Open/Closed)—The Committee will discuss proposed ACRS reports on matters considered during this meeting. In addition, the Committee will discuss a proposed ACRS report on safeguards and security matters (Closed).

Saturday, December 7, 2003, Conference Room T–2B3, Two White Flint North, Rockville, Maryland

8:30 a.m.–12 Noon: Preparation of ACRS Reports (Open/Closed)—The Committee will continue discussion of the proposed ACRS reports on matters considered during its meeting. In addition, the Committee will discuss a proposed ACRS report on Safeguards and Security matters (Closed).

12 Noon–2:30 p.m.: Miscellaneous (Open)—The Committee will discuss matters related to the conduct of Committee activities and matters and specific issues that were not completed during previous meetings, as time and availability of information permit.

Procedures for the conduct of and participation in ACRS meetings were published in the **Federal Register** on October 16, 2003 (68 FR 59644). In accordance with those procedures, oral or written views may be presented by members of the public, including representatives of the nuclear industry. Electronic recordings will be permitted only during the open portions of the meeting. Persons desiring to make oral statements should notify the Associate Director for Technical Support named below five days before the meeting, if possible, so that appropriate arrangements can be made to allow necessary time during the meeting for such statements. Use of still, motion picture, and television cameras during the meeting may be limited to selected portions of the meeting as determined by the Chairman. Information regarding the time to be set aside for this purpose may be obtained by contacting the Associate Director for Technical Support prior to the meeting. In view of the possibility that the schedule for ACRS meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with the Associate Director for Technical Support if such rescheduling would result in major inconvenience.

In accordance with subsection 10(d) Pub. L. 92–463, I have determined that it is necessary to close portions of this meeting noted above to discuss and protect information classified as national security information as well as unclassified safeguards information pursuant to 5 U.S.C. 552b(c)(1) and (3).

Further information regarding topics to be discussed, whether the meeting has been canceled or rescheduled, as well as the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by contacting Dr. Sher Bahadur, Associate Director for Technical Support (301) 415–0138, between 7:30 a.m. and 4:15 p.m., ET.

ACRS meeting agenda, meeting transcripts, and letter reports are available through the NRC Public Document Room at *pdr@nrc.gov,* or by calling the PDR at 1–800–397–4209, or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS) which is accessible from the NRC Web site at *http://www.nrc.gov/reading-rm/adams.html* or *http://www.nrc.gov/reading-rm/doc-collections/* (ACRS & ACNW Mtg schedules/agendas).

Videoteleconferencing service is available for observing open sessions of ACRS meetings. Those wishing to use this service for observing ACRS meetings should contact Mr. Theron Brown, ACRS Audio Visual Technician (301–415–8066), between 7:30 a.m. and 3:45 p.m., ET, at least 10 days before the meeting to ensure the availability of this service. Individuals or organizations requesting this service will be responsible for telephone line charges and for providing the equipment and facilities that they use to establish the videoteleconferencing link. The availability of videoteleconferencing services is not guaranteed.

The ACRS meeting dates for Calendar Year 2004 are provided below:

ACRS meeting No.	Meeting Dates
—	January 2004—No meeting.
509	February 5–7, 2004.
510	March 4–6, 2004.
511	April 15–17, 2004.
512	May 6–8, 2004.
513	June 2–4, 2004.
514	July 14–16, 2004.
—	August 2004—No meeting.
515	September 8–11, 2004.
516	October 7–9, 2004.
517	November 4–6, 2004.
518	December 2–4, 2004.

Dated: November 17, 2003.

Andrew L. Bates,

Advisory Committee Management Officer.

[FR Doc. 03–29104 Filed 11–20–03; 8:45 am]

BILLING CODE 7590–01–P

OFFICE OF MANAGEMENT AND BUDGET

Public Availability of Fiscal Year (FY) 2003 Agency Inventories Under the Federal Activities Inventory Reform Act of 1998 (Pub. L. 105–270) ("FAIR Act").

AGENCY: Office of Management and Budget; Executive Office of the President.

ACTION: Notice of public availability of agency inventory of activities that are not inherently governmental and of activities that are inherently governmental.

SUMMARY: In accordance with the FAIR Act, agency inventories of activities that are not inherently governmental are now available to the public from the agencies listed below for FY 2003. Each fiscal year, the FAIR Act requires that OMB publish an announcement of public availability of agency inventories of activities that are not inherently governmental. After review and consultation with OMB, agencies are required to make their inventories available to the public. Agencies have

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

November 14, 2003

SCHEDULE AND OUTLINE FOR DISCUSSION
508th ACRS MEETING
DECEMBER 3-6, 2003

WEDNESDAY, DECEMBER 3, 2003, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

1) 1:30 - 1:35 P.M. Opening Remarks by the ACRS Chairman (Open)
- 1.1) Opening Statement (MVB/JTL/SD)
- 1.2) Items of current interest (MVB/SD)

2) 1:35 - 6:30 P.M. Draft Report on the NRC Safety Research Program (Open) (DAP/SD/HPN)
(3:15-3:30 P.M. - BREAK)
- 2.1) Remarks by the Subcommittee Chairman
- 2.2) Discussion of the Draft ACRS report on the NRC Safety Research Program.

Representatives of the NRC staff may participate, as appropriate.

6:30 - 6:45 P.M. ***BREAK***

3) 6:45 - ~~7:15~~ 7:05 P.M. Preparation of ACRS Report (Closed) (MVB/TSK/RPS/RKM)
Discussion of proposed ACRS report on Safeguards and Security matters.

THURSDAY, DECEMBER 4, 2003, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

4) 8:30 - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (MVB/JTL/SD)

5) 8:35 - ~~10:30~~ 10:15 A.M. Draft Final 10 CFR Part 52 Construction Inspection Program Framework (TSK/SLR/MME)
- 5.1) Remarks by the Subcommittee Chairman
- 5.2) Briefing by and discussions with representatives of the NRC staff regarding the draft final construction inspection program framework for advanced reactor designs and the staff's resolution of public comments.

Representatives of the nuclear industry may provide their views, as appropriate.

~~10:30~~ 10:15 - 10:45 A.M. ***BREAK***

6) 10:45 - ~~12:15~~ 12:20 A.M. Proposed Revisions to SRP Chapter 18, Human Factors Engineering (Open) (SLR/MME)

6.1) Remarks by the Subcommittee Chairman

6.2) Briefing by and discussions with representatives of the NRC staff regarding the proposed revisions to the Standard Review Plan (SRP) Chapter 18, Human Factors Engineering.

Representatives of the nuclear industry may provide their views, as appropriate.

~~12:15~~ 12:20 - 1:20 ~~1:15~~ P.M. ***LUNCH***

7) ~~1:15~~ 1:20 - ~~2:15~~ 2:20 P.M. Draft Final Revision to 10 CFR 50.48 to Endorse NFPA 805 Fire Protection Standard (Open) (SLR/MDS)

7.1) Remarks by the Subcommittee Chairman

7.2) Briefing by and discussions with representatives of the NRC staff regarding the draft final revisions to 10 CFR 50.48, which will permit licensees to adopt the National Fire Protection Association (NFPA) 805 Standard, as an alternative to the existing fire protection requirements.

Representatives of the nuclear industry may provide their views, as appropriate.

8) ~~2:15~~ 2:20 - 3:15 P.M. Recent Operating Events (Open) (GML/MWW)
Briefing by and discussions with the cognizant ACRS member regarding significant recent operating events.

3:15 - 3:30 P.M ***BREAK***

9) 3:30 - 7:00 P.M. Preparation of ACRS Reports (Open/Closed)

3:40-4:00 9.1) Proposed Revisions to SRP Chapter 18, Human Factors Engineering (SLR/MME)

4:00-4:20 9.2) Draft Final Revision to 10 CFR 50.48 (SLR/MDS)

9.3) Safeguards and Security (Closed) (MVB/TSK/RPS/RKM)

FRIDAY, DECEMBER 5, 2003, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

10) 8:30 - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (MVB/JTL/SD)

11) 8:35 - 9:00 A.M. Subcommittee Report on the Interim Review of the License Renewal Application for the Virgil C. Summer Nuclear Station (Open) (GML/MVB/MDS)
Report by and discussions with the Plant License Renewal Subcommittee Chairman regarding the Subcommittee's review of the Virgil C. Summer Nuclear Station license renewal application and the staff's initial Safety Evaluation Report.

12) 9:00 - 10:00 A.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open) (MVB/JTL/SD)

12.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the full Committee during future ACRS meetings.

12.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments.

10:00 - 10:15 A.M. ***BREAK***

13) 10:15 - 10:30 A.M. Reconciliation of ACRS Comments and Recommendations (Open) (MVB, et al./SD, et al.)
Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.

14) 10:30 - 11:00 A.M. Election of ACRS Officers (Open) (JTL)
The Committee will elect an ACRS Chairman, Vice Chairman, and Member-at-Large for the Planning and Procedures Subcommittee for 2004.

11:00 - 2:00 P.M. ***LUNCH***

15) 2:00 - 7:00 P.M. Preparation of ACRS Reports (Open/Closed)
Discussion of the proposed ACRS reports on:

15.1) Proposed Revisions to SRP Chapter 18, Human Factors Engineering (SLR/MME)

15.2) Draft Final Revision to 10 CFR 50.48 (SLR/MDS)

15.3) Draft Final 10 CFR Part 52 Construction Inspection Program (TSK/SLR/MME) (tentative)

15.4) Draft Report on the NRC Safety Research Program (DAP/SD/HPN)

15.5) Safeguards and Security (Closed) (MVB/TSK/RPS/RKM)

SATURDAY, DECEMBER 6, 2003, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

16) 8:30 - 12:00 Noon Preparation of ACRS Reports (Open/Closed)
The Committee will continue discussion of the proposed ACRS reports listed under Item 15.

17) 12:00 - 12:30 P.M. Miscellaneous (Open) (MVB/JTL)
Discussion of matters related to the conduct of Committee activities and matters and specific issues that were not completed during previous meetings, as time and availability of information permit.

NOTE:

- **Presentation time should not exceed 50 percent of the total time allocated for a specific item. The remaining 50 percent of the time is reserved for discussion.**

- **Thirty-Five (35) copies of the presentation materials should be provided to the ACRS.**

APPENDIX III: MEETING ATTENDEES

508TH ACRS MEETING
DECEMBER 3-5, 2003

NRC STAFF
M. Ashley, NRR
J. Sebrosky, NRR
T. Cerne, Region I
L. Dudes, NRR
C. Julian, Region II
C. Carpenter, NRR
J. Lyons, NRR
D. Barss, NRR
R. Eckenrode, NRR
M. Keefe, RES
P. Lewis, RES
J. Persinsky, RES
G. Parry, NRR
J. Bongarra, NRR
J. Kramer, RES
J. Flack, RES
D. Trimble, RES
C. Ader, RES
S. Black, NRR
J. Hannon, NRR
J. Birmingham, NRR
P. Lain, NRR
A. Klein, NRR
C. Haney, NRR
R. Dudley, NRR
M. Johnson, NRR

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC
J. Higgins, BNL
R. Bell, NEI
J. O'Hara, BNL
P. Gunter, NIRS
F. Emerson, NEI

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555-0001

January 13, 2004

SCHEDULE AND OUTLINE FOR DISCUSSION
509th ACRS MEETING
FEBRUARY 5-7, 2004

THURSDAY, FEBRUARY 5, 2004, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

1) 8:30 - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open)
- 1.1) Opening Statement (MVB/JTL/SD)
- 1.2) Items of current interest (MVB/SD)

2) 8:35 - 10:30 A.M. ESBWR Design - Thermal-Hydraulic Issues (Open/Closed) (GBW/RC)
- 2.1) Remarks by the Subcommittee Chairman
- 2.2) Briefing by and discussions with representatives of the NRC staff on the use of the TRAC-G computer code to perform analyses of the Economic Simplified Boiling Water Reactor (ESBWR) design.

[NOTE: A portion of this session may be closed to discuss General Electric proprietary information applicable to this matter.]

10:30 - 10:45 A.M. ***BREAK***

3) 10:45 - 11:45 A.M. South Texas Project Cause Investigation of the Reactor Vessel Bottom Mounted Penetration Leakage (Open) (JDS/MWW)
- 3.1) Remarks by the Subcommittee Chairman
- 3.2) Briefing by and discussions with representatives of the NRC staff regarding the South Texas Project investigation of the cause of the leakage from reactor vessel bottom mounted penetration.

Representatives of the nuclear industry may provide their views, as appropriate.

11:45 - 12:45 P.M. ***LUNCH***

4) 12:45 - 2:45 P.M. Resolution of Certain Items Identified by the ACRS in NUREG-1740 Related to the Differing Professional Opinion (DPO) on Steam Generator Tube Integrity (Open) (FPF/GBW/BPJ)
- 4.1) Remarks by the Subcommittee Chairman
- 4.2) Briefing by and discussions with representatives of the NRC staff regarding the staff's resolution of certain items identified by the ACRS in NUREG-1740, "Voltage-Based Alternative Repair Criteria," related to the DPO on steam generator tube integrity, as well as the status of resolution of the remaining items.

2:45 - 3:00 P.M. *****BREAK*****

5) 3:00 - 4:00 P.M. Evaluation of the Effectiveness (Quality) of the NRC Safety Research Programs (Open) (DAP/SD/HPN)
Discussion of a proposed approach for the ACRS evaluation of the effectiveness (quality) of the NRC Safety Research Programs.

Representatives of the NRC staff may participate, as appropriate.

6) 4:00 - 7:00 P.M. Preparation of ACRS Reports (Open)
- 6.1) ESBWR Design - Thermal-Hydraulic Issues (GBW/RC)
- 6.2) Resolution of Certain Items Identified in NUREG-1740 Related to DPO on Steam Generator Tube Integrity (FPF/GBW/BPJ)
- 6.3) NRC Safety Research Program Report (DAP/SD/HPN)

FRIDAY, FEBRUARY 6, 2004, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

7) 8:30 - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (MVB/JTL/SD)

8) 8:35 - 12:30 P.M. ACRS Report on the NRC Safety Research Program (Open) (DAP/SD/HPN)
- 8.1) Remarks by the Subcommittee Chairman
- 8.2) Discussion of the draft ACRS report to the Commission on the NRC Safety Research Program.

12:30 - 1:30 P.M. *****LUNCH******

9) 1:30 - 2:00 P.M. Subcommittee Report - ACR-700 Design (Open) (TSK/MME)
Report by and discussions with the Chairman of the ACRS Subcommittee on Future Plant Designs regarding the Subcommittee's review of the design features of the ACR-700 design and related matters.

10) 2:00 - 3:00 P.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open) (MVB/JTL/SD)
- 10.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the full Committee during future ACRS meetings.
- 10.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments.

11) 3:00 - 3:15 P.M. Reconciliation of ACRS Comments and Recommendations (Open) (MVB, et al./SD, et al.)
Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.

3:15 - 3:30 P.M. *****BREAK*****

12) 3:30 - 7:00 P.M. Preparation of ACRS Reports (Open)
Discussion of the proposed ACRS reports on:
12.1) ESBWR Design - Thermal-Hydraulic Issues (GBW/RC)
12.2) Resolution of Certain Items Identified in NUREG-1740 Related to DPO on Steam Generator Tube Integrity (FPF/GBW/BPJ)
12.3) NRC Safety Research Program Report (DAP/SD/HPN)

SATURDAY, FEBRUARY 7, 2004, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

13) 8:30 - 12:00 Noon Preparation of ACRS Reports (Open)
The Committee will continue discussion of the proposed ACRS reports listed under Item 12.

14) 12:00 - 12:30 P.M. Miscellaneous (Open) (MVB/JTL)
Discussion of matters related to the conduct of Committee activities and matters and specific issues that were not completed during previous meetings, as time and availability of information permit.

NOTE:

- **Presentation time should not exceed 50 percent of the total time allocated for a specific item. The remaining 50 percent of the time is reserved for discussion.**
- **Thirty-Five (35) copies of the presentation materials should be provided to the ACRS.**

APPENDIX V
LIST OF DOCUMENTS PROVIDED TO THE COMMITTEE
508TH ACRS MEETING
DECEMBER 3-6, 2003

[Note: Some documents listed below may have been provided or prepared for Committee use only. These documents must be reviewed prior to release to the public.]

MEETING HANDOUTS

AGENDA ITEM NO.	DOCUMENTS
4	Opening Remarks by the ACRS Chairman
	1. Items of Interest dated December 3-6, 2003
5	Draft Report on the NRC Safety Research Program
	2. Construction Inspection Program presentation by M. Ashley, CIP Team Leader [Viewgraphs]
6	Proposed Revisions to SRP Chapter 18, Human Factors Engineering
	3. Standard Review Plan (SRP) Chapter 18, Human Factors Engineering and Associated Documents presentation by Office of Regulatory Research and Office of Nuclear Reactor Regulation [Viewgraphs]
7	Draft Final Revision to 10 CFR 50.48 to Endorse NFPA 805 Fire Protection Standard
	4. NFPA 805 Rulemaking briefing on Fire Protection presentation by NRR [Viewgraphs]
8	Recent Operating Events
	5. Operating Events presentation by G. Leitch, ACRS Member [Viewgraphs]
XX	Future ACRS Activities/Report of the Planning and Procedures Subcommittee
	XX. Future ACRS Activities/Final Draft Minutes of Planning and Procedures Subcommittee Meeting - **XX**, 2003 [Handout **#XX**]
XX	Reconciliation of ACRS Comments and Recommendations
	XX. Reconciliation of ACRS Comments and Recommendations [Handout **#XX**]

MEETING NOTEBOOK CONTENTS

TAB	DOCUMENTS
2	Draft 10 CFR Part 52 Construction Inspection Program Framework Document
	1. Table of Contents
	2. Proposed Agenda
	3. Status Report
	4. Draft 10 CFR Part 52 Construction Inspection Program Framework Document, May 2003
6	Proposed Revisions to SRP Chapter 18, Human Factors Engineering
	5. Table of Contents
	6. Proposed Agenda
	7. Status Report
	8. ACRS Letter dated November 13, 1995
	9. SRP/NUREG-0800, Chapter 18, "Human Factors Engineering" Draft-Rev. 2, December 2003
	10. NUREG-1764, "Guidance for the Review of Changes to Human Actions"
7	Draft Final Rule Revising 10 CFR 50.48 Allowing Licensee Use of NFPA 805 as an Alternative to Existing Fire Protection Requirements
	11. Table of Contents
	12. Proposed Schedule
	13. Status Report
	14. Draft Federal Register Notice, Subject: Final Rule, Voluntary Fire Protection Requirements for Light Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative
	15. Regulatory Analysis Related to the Proposed Revision to 10 CFR 50.48, "Fire Protection"

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
508th FULL COMMITTEE MEETING

DECEMBER 3-6, 2003

DECEMBER 4, 2003
Today's Date

NRC STAFF PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME	NRC ORGANIZATION
Mary Ann Ashley	NRR / DIPM
Joe Sebrosky	NRR/DRIP/RNRP
Tony Cerne	Region I
Laura Dudes	NRR/DRIP/RNRP
CAUDLE JULIAN	NRC RII
Cindi Carpenter	NRR/DIPM
Jim Lyons	NRR/DRIP
DAN BARSS	NRR/DIPM
Richard Eckenrode	
Molly Keefe	RES
PAUL LEWIS	RES/DSARE
J. Persensky	RES/DSARE
Garch Parry	NRR/DSSA
Jim HIGGINS	BNL
J. BONGARRA	NRR/DIPM/IROB
Joel Kramer	RES/DSARE/REAHFB
J PERSENSKY	RES/DSARE/REAHFB
JOHN FLACK	RES/DSARE/REAHFB
Dave Trimble	NRR/DIPM/IROB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
508th FULL COMMITTEE MEETING

DECEMBER 3-6, 2003

DECEMBER 4, 2003
Today's Date

NRC STAFF PLEASE SIGN IN FOR ACRS MEETING

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NAME	NRC ORGANIZATION
Charles Ader	RES/DSARE
Suzanne Black	NRR/DSSA
John Hannon	NRR/DSSA/SPLB
Joe Birmingham	NRR/DRIP/RPRP
Paul Lain	NRR/DSSA/SPLB
Alex Klein	NRR/DSSA/SPLB
Cathy Haney	NRR/DRIP/RPRP
Richard Dudley	NRR/DRIP/RPRP
Michael Johnson	NRR/DSSA

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
508th FULL COMMITTEE MEETING

DECEMBER 3-6, 2003

DECEMBER 4, 2003
Today's Date

ATTENDEES PLEASE SIGN IN FOR ACRS MEETING

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NAME	AFFILIATION
Russ Bell	NEI
John Ohtava	BNL
Paul Gunter	NIRS
Fred Emerson	NEI

(1)

ITEMS OF INTEREST

508th ACRS MEETING

DECEMBER 3-6, 2003

ITEMS OF INTEREST
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
508TH MEETING
December 3-6, 2003

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SPEECHES

OPERATING PLANT ISSUES

NRC STRATEGIC PLAN

NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION
Office of Public Affairs Telephone: 301/415-8200
Washington, DC 20555-001 E-mail: opa@nrc.gov
Web Site: http://www.nrc.gov/OPA

No. S-03-025

Chairman Nils J. Diaz
U. S. Nuclear Regulatory Commission

at the

Institute of Nuclear Power Operations (INPO)
24th Annual CEO Conference

November 6 - 7, 2003
Atlanta, Georgia

TO LICENSE AND REGULATE
- SHARPENING THE EDGES -

It is indeed my distinct privilege to address the 24th INPO CEO Conference. INPO is almost as old as the NRC; I do appreciate how considerate INPO is of its elders.

It is almost 30 years since the Nuclear Regulatory Commission was established by the Energy Reorganization Act of 1974 ("Reorganization Act"). Much has changed during that time, yet the purpose of the Reorganization Act, and the foundation established by the Atomic Energy Act ("AEA"), are as clear, relevant, and important today as then, and so is the NRC mandate. In fact, their importance might be even more easily discerned in today's national and international political, economic and security environment when three decades of experiences, and the events of September 11, 2001, are brought into consideration.

I quote from the Reorganization Act's Declaration of Purpose:

> Sec. 2 (a) The Congress hereby declares that the general welfare and the common defense and security require effective action to develop, and increase the efficiency and reliability of use of, all energy sources to meet the needs of present and future generations, to increase the productivity of the national economy and strengthen its position in regard to international trade, to make the Nation self-sufficient in energy, to advance the goals of restoring, protecting, and enhancing environmental quality, and to assure public health and safety.

> Sec. 2 (c) The Congress finds that it is in the public interest that the licensing and related regulatory functions of the Atomic Energy Commission be separated from the performance of the other functions of the Commission, and that this separation be effected in an orderly manner, pursuant to this Act, assuring adequacy of technical and other resources necessary for the performance of each.

With regard to Section 2.(a), it is clear to me that nuclear power and the use of radiation technologies are today making vital contributions to the well-being and the national security of the United States of America. With regard to Section 2.(c), the NRC continues to perform its mission to license and regulate the Nation's civilian use of byproduct, source and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

I would like to deal this afternoon with those two interdependent functions and responsibilities assigned to the NRC by the Reorganization Act: licensing and regulation, with a focus on the near term. It is the obligation of the Commission to effectively discharge these coupled responsibilities. Yet there is a need to continue sharpening both edges, and furthermore, to ensure that their execution fulfills the requirements of the Nation, in accordance with the comprehensive set of checks and balances established by the AEA and the Reorganization Act.

I believe that the NRC licensing function is not given all the respect and credit it deserves in establishing the regulatory, technical, and safety bases that ensure safe use of nuclear energy and technology for civilian purposes, in a manner responsive to the nation's needs, and in accordance with our safety mandate. In this regard, the Commission is now using a terminology that I strongly endorse: our strategic goal is "to enable the use and management of radioactive materials and nuclear fuels for beneficial civilian uses..." subject to the provisions of ensuring safety, protecting the environment and national security.

Licensing lost some of its glamour when the licensing of new nuclear power plants ended, but licensing we do, day-in and day-out; licensing is indeed a forward-looking component of our mandate and deserves effectiveness, efficiency and predictability in its execution. Licenses also set in place specific requirements, responsibilities, and rights for licensees in a manner that allows implementation and oversight. Licensing embodies the technological and legal framework, including the adequate protection requirement, used to achieve the benefits for society; regulation and oversight ensure it is being done as licensed.

A brief summary of part of the licensing landscape is shown on the enclosed Table 1, underscoring the variety of licensing issues and the importance of the licensing function.

Licensing requires the expert resolution of the pertinent technical and legal issues, and, when appropriate, adjudication. There is no doubt that technical definition, clarity of analyses, and timeliness are essential to resolving the technical and legal issues always present at the leading edge of licensing. Everyone is served by crisp processes. And there is no doubt that the nation is served best when adjudication uses the same principles. The NRC adjudicatory processes are a true exercise of democracy's checks and balances, and it is our obligation to make sure they are conducted in a manner that serves the nation's needs by achieving sound and timely decisions, without rushing them or delaying them.

I believe it is also appropriate to consider adjudication within the framework of regulation. Regulation is a tool of society to implement what society needs, in an orderly, fair and equitable manner. The combination of a democratic society and a free market provides the most powerful combination for achieving fairness, equity, and the protection of rights, property, health and safety. I also believe that the free flow of information is crucial for a free market to operate for the benefit of all.

The ultimate purpose of adjudication is to reach a decision on a matter under dispute. I hear loudly and clearly the concerns of the industry and of stakeholders regarding fair and equitable adjudication processes, and I emphasize fair and equitable. I am committed, and I am certain my fellow Commissioners are also, to sharpening the edges of the processes for resolution of technical and legal regulatory issues, including adjudication, in a manner conducive to sound and timely decision-making, with the full protection our laws afford to the parties to the process. This is as true for the simple as it is for the more complicated matters, from a narrow license amendment to an adjudication of a potential license application for Yucca Mountain.

The licensing process, including all its technical support, is that function that precedes the conduct of the actual regulated activity. There is a "transfer of technology" that must take place between the licensing organizations -- regulator and regulated alike -- and those who will conduct and oversee the licensed activities. The only reason I mentioned this is because this transfer of technology is essential for the sound conduct of licensed activities; it needs to be thorough, comprehensive and tailored to the function to be performed, and it needs re-visiting often. In this regard, my regulatory perspective on the conduct of the licensed activities could be entitled "Safety Management".

Safety management is your responsibility. Assuring that you are adequately fulfilling your safety management responsibilities in a manner that protects public health and safety, the environment, and the common defense and security is our responsibility.

Notice I am emphasizing safety management and not safety culture. I accept the importance of a sound and pervasive safety culture, and I think it is good that INPO is focusing on it and on sharpening the concept. As a regulator, I do not like the vagueness of the concept of "safety culture" -- its loose association with what to do and when to do it -- nor do I endorse the ease by which so many problems or issues are blamed on it, particularly when the causes include more identifiable and fixable issues. One major feature of the expert and safety-focused nuclear business is that we know what to do and when to do it, or at least we should; it is those rare occasions when we don't that cause troubles. For example, I could run down the major power reactor accidents and incidents, as well as the non-power reactor and fuel facility accidents, and find an important common thread: lack of the application of technical expertise when it was needed. In fact, that is the precise reason for the birth and development of INPO.

I congratulate INPO and you for your contributions to the enhancement of safety and encourage the industry to ensure that the applications of the principles of a generation ago are fostered and tuned-up for the present. INPO is an organization that understands and promotes excellence, through the "best practices" approach and other tools. I believe it is the appropriate forum to discuss excellence in safety management and its role in managing safety. Some claim we are getting old and need renewed vigilance. The term maturity comes to mind; maturity should reflect your experience and once you have it you should not lose it. For example, no accidents in U.S. power reactors have caused a radiation release adversely affecting the public health and safety, and we want to keep it that way.

Maturity has a lot to do with this achievement. But too many reactors have been shut-down for long periods of time and there have been a few events of safety significance because the requisite technical expertise was not applied in a timely manner to the resolution of design, operational and maintenance problems. I believe there is little or no reason for the NRC, and for that matter, the industry to accept the recent ones. We know better and should be committed to avoiding all those that are avoidable. We have come a long way from the safety and reliability performance of the 70s and 80s, as shown by the Industry Trend Charts (available on the NRC website at: http://www.nrc.gov/reactors/operating/oversight/industry-trends.html). A very impressive "asymptotic" behavior has been achieved as a group; the issue is to keep performance there and to reduce the singularities of safety significance.

Everyone probably has their own definition of safety management; they all share very fundamental common elements. I will share mine.

Safety management is, at least, the collective product of three essential, interactive elements that are actively managed:

1. A functional and executable commitment to operational, maintenance and engineering safety, imbedded in every activity of the organization,

2. a technical expertise that is applied where and when it should be; able to receive, process, form and communicate technical issues, cognizant of safety functions and safety systems, with licensing and regulation as boundary conditions but taken beyond them by the pursuit of safety and reliability,
and

3. the people, programs, and processes to implement a safety program effectively.

Simply stated, safety management embodies using commitment, technical expertise and good management to achieve the requisite adequate protection we demand and the reliability you need. That's all. And, the U.S. nuclear industry must do this with a demanding yet forgiving technology, one that is always in the public eye and subjected to public perception, in a still unforgiving environment.

"Sharpening the edge" on safety management, as part of the focus on safety culture, means striving for excellence by focusing on those three elements and doing them better -- not just well, but better. The reality is that there is a higher standard for the nuclear industry; you know it and you know how to achieve it.

Let me elaborate on these three essential elements of safety management. Commitment to Safety includes: the desire to do things right; a questioning attitude and a receptiveness to questioning attitudes; a willingness and ability to learn; and the experiential awareness of how indispensable safety is.

The application of technical expertise involves using: realistic conservatism in safety analysis; quality engineering based on state-of-the-art information; and, operational safety and maintenance ... founded in science, engineering, technology, and operating experience.

Again, in this area, both the technical framework and the regulatory framework need to be understood utilizing state-of-the-art know-how, including systems engineering. Last but not least, is management ... that's you! It is my long-standing position that management is your prerogative and, therefore, I will refrain from elaborating on management. However, it is obvious that management is not only the everyday driving force to form the commitment to safety and the application of technical know-how into a consistent set of activities, but it is indispensable to keep and sharpen their edges.

I once said that problems are worthless without solutions. The problems and challenges of the new nuclear safety landscape, populated by life extensions, power uprates, materials degradation, risk-informed and performance-based approaches to safety management, and long term core cooling requirements, regardless of initiating event or systems pathology, have solutions. But solutions are worthless unless they are implemented. Both the industry and the NRC have responsibilities to address the safety landscape with a comprehensive safety management approach. It is your job to implement solutions.

Absent from my discussion today have been the issues of security and emergency preparedness. It seems at times that security has consumed much of our time and efforts the last two years, and that was needed. I believe our nuclear facilities are as secure as they should be, and will be even better as the required improvements are completed. I also want to acknowledge that most in the industry have gone beyond the regulatory requirements in securing their facilities. We are continuing our efforts to integrate safety, security and emergency preparedness. We will remain vigilant and will promptly act whenever needed to protect our people.

The main subject of my discussion today is safety, and the importance of focusing on safety engineering, operations and maintenance, driven by a safety management program. I encourage you to engage us, actively and consistently, on these issues.

I also need to be clear on another important issue. I believe safety and reliability are fully compatible as long as safety comes first. It is not only foolish but also short-sighted from all angles to place economic performance ahead of safety considerations.

In summary, I believe that the vast majority in the industry have well functioning safety management programs; but it may only take a few that do not to require more regulatory involvement on our part. That is not our desire nor I assume yours, but I assure you that we will do what we must do to assure public health and safety.

It is worth remembering that, "When government decides to solve something, we have learned to be wary. The cure may not always be worse than the disease, but it is usually bigger and costs more" (Ronald Reagan).

The NRC's technical and legal framework establishes high standards that ensure adequate protection of safety, but cannot require excellence in safety management. You can, and I believe you should.

Thank you.

(November 25, 2003Copies of the slides for this speech are available from the NRC's Office of Public Affairs; telephone 301-415-8200, or e-mail opa@nrc.gov.)

NRC LICENSING ACTIVITIES
Table 1
2003

REACTOR PROGRAM:

- License Renewals	6 completed
- Design Certifications	1 Under review
	5 Under pre-application review
- Power Uprates	17 completed
- License Amendments	1900 Completed
- Early Site Permits	3 pre-application reviews completed
- License Transfers	1 Completed

NRC LICENSING ACTIVITIES
Table 1 (Cont'd)
2003

FUEL CYCLE and WASTE PROGRAMS:

- Fuel Cycle Licensing Actions	141 Completed
- MOX Fuel Fabrication Facility	Draft SER
	Draft Environmental Impact
- Spent Fuel Storage + Transportation	3 Cask Certifications Completed
	81 Transportation Container Design Reviews Completed
	27 Storage Container Design Reviews Completed
- Yucca Mountain	Final Yucca Mt. Review Plan Completed

8

NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, DC 20555-001 E-mail: opa@nrc.gov

Web Site: http://www.nrc.gov/OPA

No S-03-026

The Role of Nuclear Regulation in a Changing World

Chairman Nils J. Diaz
U.S. Nuclear Regulatory Commission

at the

Santa Fe Energy Seminar Series
U.S. - Japan Nuclear Energy Workshop

Washington, D.C.
November 24, 2003

It is indeed my pleasure and privilege to participate in the U.S. - Japan Nuclear Energy Workshop to share my perspectives as a regulator on the timely subject of the outlook for nuclear energy in a changing world. We value and are enhancing our interactions and technical exchanges with Japan's nuclear regulators in the most important areas of our countries' nuclear programs.

I believe the outlook for nuclear energy is very good, if we consider the improved state of the technology and the assured supplies of fuel, especially when we factor in the expectations of the world for an improved quality of life and for socio-political stability. **However**, ... It is in responding to "**however**" where I will focus most of my remarks, and I am sure all the speakers and participants in this workshop will -- somehow -- be doing likewise.

A changing world has given new meaning to the words "national security," "energy security and stability," "sustainable economic growth," "environmental stewardship" and "globalization." Complexities have increased. Response times have shortened. I will touch briefly on the issue of security as a platform to begin my remarks.

National security is now a dominant concern of this country and most others, and could remain so for quite some time. Our national security begins and ends with the principles and practices of our

democratic society, and with every component of our society that assures our liberty and the pursuit of happiness. National security does not depend exclusively on any one component of our society but rather on multiple layers of systems and infrastructures, as well as on political and financial elements.

I believe energy security is a key component of national security. Energy security ensures that a nation has a stable, dependable, safe, and abundant supply of energy. In the modern world, energy is the lifeblood of the nation, and those who imagine otherwise are deluding themselves. Energy security, economic security, and national security in the traditional sense are bound together in a seamless web, and we cannot ignore our long-term energy needs without also imperiling other aspects of our security. In this regard, the safe and reliable operation of nuclear power plants is vital to our energy security and, therefore, to the well-being of our people, and I believe it is the same for the people of Japan. From an overall energy and economical perspective, nuclear electricity supply can be a major stabilizing force in energy markets, and I believe it could be especially so if eventually coupled with hydrogen production.

I return now to the "**however**". Regulation is a tool of society to achieve predictable and beneficial use of an activity. I have said many times: "Regulation must result in a benefit or it will result in a loss." I dare to say this is particularly true in the case of nuclear power, a technology that is always in the public eye and subjected to public perception, in a still unforgiving environment regarding its performance.

The viability, and the probable growth, of nuclear power is inextricably linked to its regulation. There is no way, presently or in the foreseeable future, to maintain and to advance the use of nuclear power without a strong, predictable, and credible regulatory framework. Therefore, it is essential that regulatory infrastructures be all that they can be: safety-focused, with state-of-the-art know-how in every important safety aspect. Regulators should and must make independent safety-based decisions, listening to and respecting different views, and making decisions in the public interest free from undue external political influence. We also have the obligation of communicating both the good and the not-so-good safety performance, and what we are doing about it. This includes assessing and explaining potential risks with realistically conservative analysis as we carry out our mandate to provide reasonable assurances to protect the public health and safety, the environment; and the common defense and security. The present and the future of nuclear power in a changing world is directly tied to how well this mandate is accomplished, as well as to the perception of how well it is accomplished. Both the regulator and the regulated have the responsibility to address the requirements of this mandate but it is the industry's responsibility to implement solutions and to manage safety. However, it is the indispensable responsibility of the nuclear regulator to ensure a predictable, stable, and transparent set of licensing and regulatory requirements. The exercise of these responsibilities plays a large role in these turbulent times, when nuclear generation is making a vital contribution to energy security. These responsibilities are also important components for the future outlook and growth of nuclear energy.

Let me return to the present. I mentioned our obligation to protect public health and safety. The proof of the pudding is in the tasting -- that is a performance-based concept. Let me summarize the results of the efforts of the U.S. nuclear power industry and of the NRC: no member of the U.S. public has been injured from the operation of or from any event or accident at nuclear power plants. No one. The 103 nuclear power plants currently in operation in the U.S., and those now shutdown, have been operated by our licensees in a manner that has protected the public from radiological hazards. I emphasize our licensees because they have the responsibility for the safe operation of the plants; they run them, we regulate them, in a manner that allows the beneficial use of these installations

without compromising safety or security. Because our system makes plant operators responsible for the safety of their plants, it is essential for the NRC to have very clearly defined licensing and regulatory processes that provide predictability in what is required, inspected, and reported to assure safety. Aside from licensing activities, we independently conduct assessments and inspections to verify that adequate safety margins are maintained. Thus, the safety framework includes both the licensees' multiple programs for conducting safe operations, implemented through operational safety programs, and the government's clear role in providing independent analysis and oversight for assurance of safety. In this way, licensees are able to fulfill their intended function; which is to supply -- in a safe and secure manner -- electricity from nuclear power plants.

Operational safety is a broad concept that includes the obligation of nuclear power stations to maintain adequate safety margins. The U.S. Nuclear Regulatory Commission requires nuclear power plants to shutdown when they cannot maintain the essential safety margins embodied in the plant Technical Specifications. But we do not require plants to shut down when there are small decreases in safety margins, as long as the licensees maintain the margins that have been agreed upon as needed for continued safe operation of their plants -- adequate margins to protect public health and safety. Our law is clear, and I quote from our courts: "The level of adequate protection, need not, and almost certainly will not, be the level of zero risk". This is because we recognize and accept the fact that all human activities have a level of risk that is greater than zero. It is not only lawful, but can be beneficial to society to operate facilities, including nuclear power plants, with equipment or processes that have only minor defects or deficiencies as long as they are within acceptable safety standards. It is also important that prompt corrective actions be taken, as they are needed. Safe operation of these facilities can then contribute to the economy and quality of life of the country. I believe U.S. nuclear power plants, operating within these constraints and rights, today have an excellent record of safety and reliability. These two factors, safety and reliability, actually reinforce each other, with one proviso: safety must always be first. I believe that the majority of U.S. nuclear power plant operators, guided by a clear set of safety rules, and by high safety expectations, have focused on safety, and found a corresponding increase in their reliability and competitiveness.

Let me be a bit more specific on the role of regulation in nuclear energy and a changing world. It is more than obvious that under-regulation, over-regulation, or stagnant regulation can have a deleterious effect on the development of nuclear technology. It is not so obvious that a stagnant nuclear technology has the same effect on regulation, yet it does. Both nuclear regulation and technology changed little during the most rapid pace of technological improvements in the history of mankind. A bit of U.S. history would help to emphasize these points:

(1) the core of deployed nuclear reactor technology is about 40 years old;

(2) the core of nuclear reactor regulation is about 30 years old; and,

(3) the technology is defined by a docketed design basis, which lasts the plant lifetime.

For example, the key U.S. reactor safety criteria and regulations, like 10 CFR Part 50 Appendices A and B, ECCS criteria, etc. are about 30 years old and have served their function. **However**, ...

Surprisingly -- or perhaps not so surprisingly -- the industry performance gains from 1985 to 1996 were achieved by steady, systematic operational and management improvements, without technological or regulatory breakthroughs. The overall performance gains, including improved economics, enabled the industry to make major commitments, like license renewal, power uprates, and technological improvements. All of these enhancements were, and still are, bounded by the traditional design basis and accident criteria, and all they entail. By the mid-1990s, the pace of needed improvements accelerated, and I believe we are now at the threshold of implementation of both technological and regulatory improvements that are significant and beneficial to society.

There are a few lessons in the last 30 years that should not be lost on those seeking to reduce to practice what has been learned. One is very apparent to me: nuclear technology and its regulatory framework must be in-phase with each other, compatible and predictable; and this requires utilizing state-of-the-art know-how for all key issues of safety and technology.

This is a mature industry with a mature regulator, and maturity has a lot to do with the present high performance of the nuclear fleet. In the nuclear business, maturity also requires learning, awareness of the old and new, and the appropriate application of know-how, especially for emerging issues. However, there have been lapses in performance. Indeed, I believe too many reactors in the U.S. have been shutdown for long periods of time, and there have been a few avoidable events of safety significance, because the requisite technical expertise and safety management criteria were not applied in a timely manner to the resolution of design, operational and maintenance problems. This is not acceptable.

The NRC has increased its safety focus on licensing and oversight activities by applying a balanced combination of experience, deterministic models, and probabilistic analysis. We called this approach risk-informed and performance-based. This enhanced safety focus is used by our licensees and by the agency in a concerted effort to ensure adequate protection of public health and safety with a more quantitative and up-to-date technical basis. It has resulted in significant improvements in the effectiveness and efficiency of our activities. Some of the most important of these are license renewals, power uprates, and license amendments. We also apply this safety focus to day-to-day safety regulatory activities. For example, materials degradation and safety system performance are now receiving increased attention to prevent deterioration of safety margins.

Let me turn to the future. Three early site permit applications could indicate that the nuclear option is under serious consideration for the near future, and the proposed "Energy Bill" is setting a firm basis for advanced reactor deployment. In this proposed law, the NRC is called on to work with the President on an assessment of the threats that pose an appreciable risk to the security of various classes of licensees. The NRC is also given licensing and regulatory authority in connection with the new Advanced Reactor Hydrogen Cogeneration Project. I am sure that Mr. Magwood will touch on these and other important aspects of the legislation. And here, in the same manner as for the present fleet, the need for predictability and stability are important to fulfilling the needs of the country. It does not make sense to operate the present U.S. nuclear fleet without using the pertinent advances in safety, regulation, and technological know-how; it makes much less sense to enter into a new nuclear power deployment phase without a state-of-the-art technology and regulation, and the capability to upgrade them in discrete steps. Why? The reason is the need for reliable operation over long periods of time coupled with the need for top-notch safety performance! One fact has emerged recently in the U.S. to illustrate this point: most existing nuclear power plants in the U.S. are expected to operate for 60 years,

and new nuclear power plants might be designed and constructed to last for at least that long, an eternity in the on-going technological revolution.

There are many other reasons that call out for regulatory advances; some are quite technical. For example, the Large Break LOCA is no longer useful as the dominant accident sequence, and neither conventional defense-in-depth nor the design basis have allowed for significant technological and regulatory innovation. We have experienced what happens when regulation is imposed after the fact on a technology being deployed. It was not possible to do it any other way thirty years ago. But it is now possible and necessary to integrate the development of nuclear technology and its regulatory framework. Relevant and extremely valuable experience has been gained from the Evolutionary and Advanced Reactors Design certification programs. These programs allow for the resolution of substantive technological and regulatory issues during the pre-application and application processes. They have produced better reactor designs with minimal patchwork requirements. These experiences have been the right stepping stones for a new way of doing things. There is also no doubt that information technology has supported the implementation of these enhancements to regulatory processes, while maintaining, or even improving, their transparency.

As I stated at the onset, assuring adequate protection of the environment is also part of the NRC mandate. Environmental stewardship is a value that is reflected in our obligation to take the long view. We need to bequeath to our children and grandchildren not only a country that is secure, economically and otherwise, but also livable with a high quality of life standard, where energy sufficiency goes hand in hand with environmental preservation. Nuclear power generation has served as a main supplier of electricity in the United States, and it has done so safely, cleanly and securely, year after year.

I have been talking primarily about the nuclear power situation in the United States, but my remarks also apply to the global community. With increased economic development around the globe, there is an increased need for energy security through diverse sources of energy to continue the improvements in life brought about by economic development. Nuclear power is a valuable asset that can be used as part of the energy mix to provide energy security, with the essential proviso that safety of operation always comes first. I am convinced that we all know how to use commitment to safety, technical expertise, and sound management to achieve the requisite assurance of adequate protection of the public health and safety, the environment, and the common defense and security that regulators demand, and the reliability that the industry needs.

I remain convinced that the cornerstones needed for achieving energy security are available and need to be carefully managed in these dynamic times, and that nuclear energy is well situated to contribute to energy security, with safe and reliable electrical generation.

I am pleased to participate in this workshop, and I wish you success.

NOED-03-6-004 - Vogtle 2 (Southern Nuclear Operating Company, Inc.)

November 7, 2003

Mr. J. T. Gasser,
Vice President
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: NOTICE OF ENFORCEMENT DISCRETION (NOED) FOR SOUTHERN NUCLEAR OPERATING COMPANY REGARDING VOGTLE ELECTRIC GENERATING PLANT, UNIT 2 (TAC NO. MC1180, NOED NO. 03-6-004)

Dear Mr. Gasser:

By letter dated November 5, 2003, you formally documented a verbal request made on November 3, 2003, for discretionary enforcement concerning Vogtle Electric Generating Plant (VEGP), Unit 2, 31-day staggered test basis Actuation Logic Tests required by Surveillance Requirements (SR) 3.3.1.5 and 3.3.2.2 for the Solid State Protection System (SSPS). These tests are:

- P-14 initiated P-4/Feedwater Isolation [FWI] seal-in (Normal Memory Test)
- SI (Steam Injection) initiated P-4/Feedwater Isolation seal-in (Normal Memory Test)
- P-14 initiated Feedwater Isolation (FWI Actuation Logic Test)
- SI initiated Feedwater Isolation (FWI Actuation Logic Test)
- P-10 block of Source Range Neutron Flux Reactor Trip (P10/P6 Interlock Test)

Southern Nuclear Operating Company (SNC, the licensee) could not perform this testing because of a broken test switch. Most of these tests involve Feedwater Isolation, while the remaining test is for blocking of the Source Range Neutron Flux Reactor Trip.

Your letter addressed the information previously discussed with the NRC during two telephone conferences on November 3, 2003, at 3:00 p.m., and November 4, 2003, at 1:30 p.m. The principal NRC staff members who participated in the telephone conferences included: Edwin M. Hackett, Director, Project Directorate II (PD2), Division of Licensing Project Management (DLPM), Office of Nuclear Reactor Regulation (NRR); Victor M. McCree, Director, Division of Reactor Projects (DRP), Region II (RII); Walter G. Rogers, Division of Reactor Safety (DRS), RII; Brian R. Bonser, Chief, Branch 2, DRP, RII; Norman Merriweather, DRS, RII; John Zeiler, Sr. Resident-VEGP, DRP, RII; John A. Nakoski, Section Chief, PD2-1, DLPM, NRR; Frank Rinaldi and Sean Peters, Project Managers, PD2-1, DLPM, NRR; Carl Schulten, Reactor Operations Branch, Division of Regulations Improvement Programs, NRR; Nicholas Saltos, Probabilistic Safety Assessment Branch, Division of Systems Safety and Analysis, and Hukam Garg, Electrical and Instrumentation and Controls Branch, Division of Engineering, NRR.

Since restoration activities would exceed the Technical Specifications (TS) allowable outage time (AOT) for the SSPS, you requested that a NOED be issued pursuant to the NRC's policy regarding exercise of discretion for an operating facility, set out in Section VII.C, of the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. The requested NOED would be effective for an additional 28 days from the date and time that the required tests were to be completed (November 5, 2003, 4:36 AM EST).

This letter documents our verbal issuance of the NOED during the telephone conference on November 4, 2003, at 2:15 PM EST. As of the date of this letter, we understand that the condition causing the need for this NOED has not yet been corrected.

On October 26, 2003, the licensee performed Surveillance Test Procedure 14421-2, "Solid State Protection System (S[redacted] and Reactor Trip Breaker Train B Operability Test" on VEGP, Unit 2, utilizing the Memories Test Switch. The switch is m[redacted] up of a bank of switches and contacts held together by screws and nuts. The functions tested by the use of this switch are:

- Power Range Low Setpoint Trip Block (Switch position 1)
- Intermediate Range Block (Switch position 2)
- Source Range Neutron Flux Trip Block (Switch positions 3 and 4)
- Safety Injection Block, Pressurizer (Switch positions 5 and 6)
- SI Block, High Steam Pressure Rate (Switch positions 7 and 8)
- Auto SI Block (Switch position 9)
- Feedwater Isolation on P-14 or SI (Switch positions 10 and 11).

Memory testing with the switch in positions 1 to 9 was completed satisfactorily, but the expected response was not obtained for switch positions 10 and 11. Also, for switch positions 6, 7, and 9, the operator had to apply some force to the switch for it to operate successfully. The need to provide some force to the switch to obtain the proper response had been experienced during previous tests. The following observations document the history of the problems with the VEGP, Unit 2, Train B, Memories Test Switch:

- Switch positions 2 and 8 initially indicate BAD [unable to test position] on April 23, 2001. However, the switch was moved to the previous positions and retested successfully. A maintenance work order was written and scheduled for refueling outage 2R10.
- Switch positions 2, 5, and 9 initially indicate BAD on November 23, 2002. Retest was successful.
- Switch positions 4, 8, and 9 initially test BAD on March 16, 2003. Retest was successful.
- Switch positions 2, 5, 7, 8, and 11 initially test BAD on September 7, 2003. Retest was successful but [redacted] multiple attempts were required for positions 8 and 11 to pass.
- Condition documented in this proposed request for enforcement discretion (10/26/03).

Based on this history and the ability to successfully complete the test in the past, the licensee expected that SNC would be able to complete the required surveillances until the switch would be replaced in refueling outage 2R10 (Spring 2004).

As a result of the malfunction of the Memories Test Switch, SNC has been unable to complete the actuation logic surveillances referenced above. These surveillances were to become late on November 5, 2003, at 4:36 AM EST, at which time the applicable portions of VEGP, Unit 2, Train B SSPS would have to be declared inoperable in accordance with VEGP's TS. The licensee has stated that replacement of the Memories Test Switch during power operation is not feasible due to the fact that Train B SSPS would be out of service for as much as 36 hours, and the attendant risk increase due to such an activity. Therefore, SNC requested enforcement discretion for the interval of the above referenced surveillances for a period not to exceed 28 days from 4:36 AM EST on November 5, 2003. The safety bases for the NOED request included a discussion of four proposed alternatives, compensatory measures, and an evaluation of the potential impact on the public health and safety and the environment.

The proposed alternatives considered by SNC are:

- Replace the faulty Memories Test Switch during power operation. This would involve taking Train B SSPS out of service for at least 36 hours, thus, incurring an increase in risk while one train of SSPS is out of service plus the attendant trip risk while working on the SSPS while at power. This alternative was ruled out because of the additional time required beyond the current 24-hour AOT and the trip risk.
- Shut the unit down to Mode 5 to replace the faulty switch. This shutdown option would involve an increase[redacted] in risk due to shutting the unit down, plus an additional thermal cycle on the reactor coolant pressure boundary.

- Complete the surveillance using jumpers to mimic the function of the memories test switch. While this alternative is feasible, it is not the preferred option because it involves entering the logic cabinet and installing jumpers which poses a potential trip risk and the potential for error.

- Remain at power until the refueling outage scheduled for April 2004. This alternative was selected based on consideration of the associated risk.

SNC's evaluation concluded that since the subject circuits could not be tested properly, the failure probability of the Train B feedwater isolation signal and that of the seal-in circuit will be increased until the function is tested successfully. However, the Train A feed water isolation (both actuation and seal-in circuits) has been verified operable via surveillance testing. Therefore, feedwater isolation will be assured by the Train A SSPS and all valves will remain closed by the seal-in signal. Even if the feedwater isolation signal from Train A fails, feedwater isolation can still be accomplished by Train B even though the failure probability of Train B is higher. In the case of a secondary side break (SSB), feed water isolation, as well as closure of the main steam isolation valves and termination of auxiliary feedwater flow, is required for the isolation of the faulted steam generator (SG) from the intact SGs for reducing the cooldown rate associated with the secondary break. However, core damage would not occur as long as the reactor coolant system remains intact and high pressure safety injection is successful. Out of the total 11 SSB core damage sequences, 3 sequences have been identified as core damage sequences involving failure of SG isolation.

Feedwater isolation may also be needed for the isolation of the ruptured SG in steam generator tube (SGTR) sequences. However, in the VEGP Probabilistic Risk Assessment (PRA) model manual isolation of the faulted SG was credited not isolation by a automatic feedwater isolation signal. Thus, the estimated SGTR risk with failure of the Train B feedwater isolation signal remained the same as those for the base cases.

The rest of the initiating events do not involve any secondary side breaches, and feedwater isolation is not required. Thus, the 3 SSB sequences are the only contributors to the core damage frequency (CDF) and large early release frequency (LERF) risk associated with the degradation of the Train B feedwater isolation signal. Since the total contribution of all of the SSB sequences to the total CDF and LERF is very small, less than 0.5 percent of the total risk for both CDF and LERF risks, and the automatic signal from the Train A SSPS or the capability to manually isolate feedwater is not affected by the condition addressed by this enforcement discretion, the risk increase associated with degradation of the of the Train B feedwater isolation signal was estimated to be negligible by the criteria of Regulatory Guide 1.177.

During the performance of the surveillance, the testing of the P-10 block of the source range trip was not tested. During power operation, the source range neutron flux trip function is blocked. When operating above the P-10 setpoint, P-10 ensures that the source range neutron flux remains blocked. The consequences of a failure of the source range trip block could be a reactor trip. For this to occur a failure of P-10 is required and an operator error would have to occur to reinstate the source range trip. This is not a likely scenario since it requires two separate and unrelated failures.

Operating history at VEGP has demonstrated that the SSPS is highly reliable. For Unit 1, there have been approximately 180 performances of actuation logic testing, and for Unit 2, approximately 150 performances. The actuation logic test procedure currently performs approximately 170 individual logic tests. A review of the test results has not revealed any logic failures. In addition, all inputs to the SSPS have been demonstrated to be operable via other required surveillance testing. The very small increase in risk discussed above is outweighed by compensatory measures that are discussed below. Hence, there is no net increase in risk. Therefore, the safety consequences of operation under the proposed NOED, as demonstrated by SNC's risk evaluation, present the safest course of action as compared to repairing the switch at power or shutting the unit down to repair the switch.

Public health and safety will not be adversely impacted by continuance of power operation of VEGP Unit 2. By maintaining VEGP, Unit 2 at power, the risk of a transient during power reduction requiring the actuation of the SSPS is offset. SNC has evaluated the request for enforcement discretion against the criteria set forth in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.92 and concludes that the request involves no significant hazards consideration. Also, the requested enforcement discretion does not affect normal operation of the unit and does not alter any accident analysis results. Therefore, granting this NOED will not involve any significant change in the types or amounts of effluents that may be released offsite and no increase in the individual or cumulative occupational radiation exposure. This request for enforcement discretion does not involve any adverse environmental consequences. Further, the duration of the noncompliance (28 days) will allow SNC sufficient time to submit, and the NRC to review, an exigent change to VEGP, Unit 2 in accordance with 10 CFR 50.91(a)(6).

The control room operators will be briefed on the circuits in B Train SSPS that have not been tested due to the failure of the Memories Test Switch. This briefing will include a discussion of how a failure of these circuits would affect VEGP, Unit 2 operations. In view of the inability to test the above described functions, the operators will be directed to take the following compensatory measures:

- Operators are to be aware of the inability to test B-FWI and maintain an increased sensitivity to verify FWI following Reactor Trip.

- In the event that FWI is necessary and does not occur, Operators will take the additional precautionary actions: place the main feedwater regulation valve and bypass feedwater control valve controllers in manual and closed; main feedwater isolation valve's in fast close/pull on lock; and bypass feedwater isolation valve's in the close/auto position.

- Twice per shift, while in Modes 1-4, Operators will verify correct indications for following and log completion for the following activities in the unit control log:

    - SG Levels
    - Pressurizer Pressure
    - SG Pressure
    - Containment Pressure
    - P-6, P-10 bypass and permissive light panels (BPLPs) and associated trip status lights
    - SR Trip Blocked BPLP's

- Increased operator rounds to twice per shift for the inspection of the main steam valve rooms and turbine building for steam leaks. This will increase the likelihood of precursors to secondary side breaks being identified so that prompt action can be taken.

- If for any reason VEGP, Unit 2 has to be taken to Mode 3 during the duration of the enforcement discretion, the faulty switch will be replaced.

This NOED is intended to avoid unnecessary transients as a result of compliance with the license condition and, thus, to minimize potential safety consequences and operational risks. The qualitative evaluation and compensatory measures in place that operation under this NOED provides the lowest risk course of action when compared to the other alternatives.

The NRC staff has reviewed your request and agree that the proposed alternative is acceptable and would avoid the potential for a plant transient that could occur during a plant shutdown. Also, we agree that your interim compensatory measures, risk analysis, and safety basis considerations have demonstrated that continued operation of VEGP, Unit 2, would not involve a net increase in radiological risk and would not adversely affect public health and safety. Further, our decision is based primarily on the request being risk neutral and providing assurance of public health and safety.

On the basis of the NRC staff's evaluation of your request and the information provided in your letter dated November 5, 2003, the NRC staff concludes that issuance of this NOED is consistent with the Enforcement Policy and staff guidance, and has no adverse impact on public health and safety. Therefore, it is our intention to exercise discretion not to enforce compliance with VEGP, Unit 2, 31-day staggered test basis Actuation Logic Tests required by SR 3.3.1.5 and 3.3.2.2 for 28 days, starting from November 5, 2003, at 4:36 AM and ending in 28 days. However, as stated in the Enforcement Policy, action will be taken to the extent that violations are involved, for the root cause or causes that led to the request for this NOED.

Sincerely,

/RA/

Edwin M. Hackett, Director
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-425
License No. NPF-81

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
WASHINGTON, D.C. 20555

October 22, 2003

NRC INFORMATION NOTICE 2003-20: DERATING WHITING CRANES PURCHASED BEFORE 1980

Addressees

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel; applicable decommissioning reactors, fuel facilities, and independent spent fuel storage installations.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to notify licensees of a recent report from Whiting Corporation concerning the derating of Whiting cranes sold before 1980. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to address this problem. However, suggestions contained in this IN are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

On January 29, 2003, Whiting Corporation submitted a 10 CFR Part 21 report (Event Notification No. 39545 and Part 21 No. 2003-002-00) to the NRC. The concern described in this report was specific to the Whiting #25 Hoist Unit (Gear Case). When the crane is lifting a load at or near its nominal rating, the stress in one or possibly two internal support bolts in this assembly may be significantly over the design allowable stress. These bolts connect the gear case housing to an open frame that supports bearings and other components in the gear train. If a bolt failed, the open frame might deform, affecting gear alignment. Whiting identified this problem during an engineering analysis, and Whiting Corporation was not aware of any crane failures due to this concern.

The exact extent of the overstressed condition can only be determined by analyzing each hoist; however, based on its findings, Whiting Corporation stated that a 50 percent reduction in rated hoist capacity of the affected cranes would allow continued use of the cranes without compromising design safety factors. Whiting indicated that this limitation should be enforced until the overstressed bolts have been replaced or analysis shows that an overstressed condition does not exist.

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On February 12, 2003, Whiting Corporation submitted a followup Part 21 report to the NRC related to the above notification. As a result of the ongoing investigation and resolution of the January 29, 2003, notification, Whiting identified five cranes that utilize a different hoist configuration that was also subject to a similar overstress condition. This condition applied to special hoist arrangements using a Whiting #10 Hoist Unit, rather than the previously identified Whiting #25 Hoist Unit. The cranes are installed at the following nuclear power plants: Indian Point, Cooper, Columbia Generating Station, Vermont Yankee, and Millstone. Whiting Corporation stated that these hoist units are to be limited to 20 percent of rated capacity to avoid compromising design factors and that this limitation should be enforced until the units are upgraded.

Discussion

The identified conditions involve calculated stresses in the support bolts that exceed design limits specified in applicable design standards. No actual failures have occurred. Failure of the components subject to the overstress condition would not directly result in failure of the crane to retain its load. However, the failure of a support bolt may result in deformation of the frame housing the gear train bearings. The deformation would allow misalignment and potential overstress of gear teeth to develop. The gear teeth transmit torque from the hoist motor and holding brake to the load drum. Therefore, this concern is a facility and personnel safety issue.

This Part 21 report is applicable to a wide variety of cranes purchased prior to 1980, including reactor building cranes, turbine building cranes, fuel handling cranes, spent fuel cranes, intake structure cranes, auxiliary building cranes, refueling cranes, cask handling cranes, fuel gantry cranes, radwaste handling cranes, screenwell cranes, heater bay cranes, and pumphouse cranes. Other cranes may also be impacted.

During the Part 21 evaluation process, Whiting Corporation failed to identify a decommissioning reactor facility (Fermi 1) that utilized one of the affected hoist units. This particular Part 21 report is applicable to decommissioning reactors as well as operating reactors because decommissioning facilities continue to utilize cranes for fuel handling, radioactive waste handling, and related activities for handling contaminated or activated structures, systems, and components in support of decommissioning.

The Part 21 report requests crane owners to contact Whiting Corporation at e-mail address Whiting-Nuclear@WhitingCorp.com and provide the following information: customer name, contact person, e-mail address, telephone number, crane serial number, and date of next scheduled outage. The above Part 21 reports may be obtained from NRC's home page at http://www.nrc.gov/reading-rm/doc-collections/event-status/part21/.

This IN requires no specific action or written response. If you have any questions about this notice, contact one of the persons listed below or the appropriate project manager.

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Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
2003-19	Unanalyzed Condition of Reactor Coolant Pump Seal Leakoff Line During Postulated Fire Scenarios or Station Blackout	10/06/2003	All holders of operating licenses or construction permits for pressurized water reactors (PWRs).
2003-18	General Electric Type SBM Control Switches With Defective Cam Followers	09/26/2003	All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.
2003-17	Reduced Service Life of Automatic Switch Company (ASCO) Solenoid Valves With Buna-N Material	09/29/2003	All holders of operating licenses for nuclear power reactors.
2003-16	Icing Conditions Between Bottom of Dry Storage System and Storage Pad	10/06/2003	All 10 CFR Part 72 licensees and certificate holders.
2003-15	Importance of Followup Activities in Resolving Maintenance Issues	09/05/2003	All holders of operating licenses for nuclear power reactors except those who have permanently ceased operation and have certified that fuel has been permanently removed from the reactor vessel.

Note: NRC generic communications may be received in electronic format shortly after they are issued by subscribing to the NRC listserver as follows:

To subscribe send an e-mail to <listproc@nrc.gov >, no subject, and the following command in the message portion:

subscribe gc-nrr firstname lastname

OL = Operating License
CP = Construction Permit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, DC 20555-0001

October 6, 2003

NRC INFORMATION NOTICE 2003-19: UNANALYZED CONDITION OF REACTOR COOLANT PUMP SEAL LEAKOFF LINE DURING POSTULATED FIRE SCENARIOS OR STATION BLACKOUT

Addressees

All holders of operating licenses or construction permits for pressurized water reactors (PWRs).

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to alert addressees to the recent identification of an unanalyzed condition involving the design of the reactor coolant pump (RCP) seal leakoff line. The NRC anticipates that recipients will review the information for applicability to their facilities and consider taking appropriate actions. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

On January 13, 2003 the Millstone Unit 3 licensee identified that an over-pressurization of RCP seal leakoff lines could result from an extended loss of seal cooling following station blackout (SBO) scenarios or postulated fires in specific plant areas coincident with a loss of offsite power. Specifically, the licensee relies on operators to isolate the low pressure portion of the seal leakoff to prevent the line from over-pressurizing. The licensee determined this expectation may not be achievable because the valve used to isolate the low pressure portion of the seal leakoff line is an air-operated valve. This valve is designed to fail open upon loss of electrical power or instrument air, either of which could occur during a SBO or a loss of offsite power coincident with a postulated fire event.

The seal return line for RCPs is designed to recover leakoff volume, at low pressure and temperature, and return it to the volume control tank or charging pump suction. In the event of a fire in the cable spreading area, main control room, or instrument rack rooms, coincident with a loss of offsite power, a loss of RCP seal cooling could result. This situation can lead to a significant increase in RCP seal leakage which would increase the pressure and fluid temperature in the seal return line. This over pressurization could result in a pressure boundary failure of the seal return line, further increasing the RCP seal leakage beyond that assumed in the safe shutdown analysis.

ML032760027

The resulting rupture would divert more of the credited boric acid storage tank (BAST) volume than was assumed in the development of the licensee's fire safe-shutdown strategies. Therefore, the strategies may not be adequate to achieve safe-shutdown.

Discussion

The licensee identified this issue while reviewing a Westinghouse (W) document on RCP seal performance during loss of RCP seal cooling events, OG-00-009, "Transmittal of RCP Operation During Loss of Seal Cooling (MUHP-1063)," dated February 11, 2000. The W document states that up to 21 gallons per minute (gpm) leakoff from each RCP could occur for loss of seal cooling events following postulated fire or Station Blackout (SBO) events, which exceeds the 3 gpm assumed in the Millstone Unit 3 fire safe shutdown analysis. Therefore, the licensee concluded that the fire safe shutdown analysis was invalid, but the SBO analysis, which assumes 25 gpm leakoff, was valid.

Upon further investigation, the licensee determined that a loss of seal cooling event could not be mitigated successfully because the seal leakoff line could not be isolated by the air-operated valves (AOVs) located in the RCP seal return piping. These AOVs cannot be credited to close because they are not fed by a safety-related air system, and they are designed to fail open. As a result of the loss of seal cooling and fire scenarios described above, pressures in the seal leakoff line would reach approximately 800 to 2000 psig. Since the piping segment downstream of each AOV and upstream of the flow restriction orifice is designed 150 psig, this portion of the leakoff line could rupture, inducing leakoff flow rates in excess of the 21 gpm identified in the W document. These flow rates severely challenge the credited contents of the BAST and the requirements for achieving and maintaining safe shutdown in accordance with the applicable licensing basis.

The licensee had been aware of the potential for over pressurization of the seal leakoff line from a 1992 Westinghouse Technical Bulletin, NSD-TB-91-07-R1, "Over pressurization of RCP #1 Seal Leakoff Line." However, while the licensee had implemented specific recommendations contained in the bulletin, the licensee had not considered the potential for the AOVs in the seal leakoff line to be open. Therefore, the licensee did not consider a potential pressure boundary failure in the leakoff line that would divert the BAST contents credited for achieving and maintaining safe shutdown.

To mitigate and resolve the events described in this IN the licensee has: (1) instituted compensatory measures for the degraded condition, including continuous fire watches, placement of additional fire extinguishers in the three affected plant areas, and administratively controlling transient combustibles; (2) initiated plant design changes involving the RCP seal leak-off lines to preclude the possibility of rupture during loss-of-all-seal cooling events, i.e., replacement of susceptible valves and flanges; (3) performed engineering analyses regarding the event's impact on charging pumps and pressurizer level during the event; and (4) revised fire shutdown strategies to effectively mitigate the event.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

/RA/
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Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
2003-18	General Electric Type SBM Control Switches With Defective Cam Followers	09/26/2003	All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.
2003-17	Reduced Service Life of Automatic Switch Company (ASCO) Solenoid Valves With Buna-N Material	09/29/2003	All holders of operating licenses for nuclear power reactors.
2003-16	Icing Conditions Between Bottom of Dry Storage System and Storage Pad	Pending	All 10 CFR Part 72 licensees and certificate holders.
2003-15	Importance of Followup Activities in Resolving Maintenance Issues	09/05/2003	All holders of operating licenses for nuclear power reactors except those who have permanently ceased operation and have certified that fuel has been permanently removed from the reactor vessel.
2003-14	Potential Vulnerability of Plant Computer Network to Worm Infection	08/29/2003	All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Note: NRC generic communications may be received in electronic format shortly after they are issued by subscribing to the NRC listserver as follows:

To subscribe send an e-mail to <listproc@nrc.gov >, no subject, and the following command in the message portion:

subscribe gc-nrr firstname lastname

OL = Operating License
CP = Construction Permit

U.S. Nuclear Regulatory Commission

FY 2004–2009
Strategic Plan

— Draft —

November 7, 2003

Contents

Appendices

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November 7, 2003

NRC Principles of Good Regulation

INDEPENDENT

Nothing but the highest possible standards of ethical performance and professionalism should influence regulation. However, independence does not imply isolation. The NRC will seek all available facts and opinions openly from licensees and other interested members of the public and consider the many and possibly conflicting public interests involved. The NRC will strive to base final decisions on objective, unbiased assessments of all information and explicitly state its reasons for the decisions.

OPEN

Nuclear regulation is the public's business, and it must be transacted publicly and candidly. The public must be informed about and have the opportunity to participate in the regulatory processes as required by law. Open channels of communication must be maintained with Congress, other government agencies, licensees, and the public, as well as with the international nuclear community.

EFFICIENT

The American taxpayer, the rate-paying consumer, and licensees are all entitled to the best possible management and administration of regulatory activities. The highest technical and managerial competence is required and must be a constant agency goal. The NRC must establish means to evaluate and continually upgrade its regulatory capabilities. Regulatory activities should be consistent with the degree of risk reduction they achieve. Where several effective alternatives are available, the option that minimizes the use of resources should be adopted. Regulatory decisions should be made without undue delay.

CLEAR

Regulations should be coherent, logical, and practical. There should be a clear nexus between regulations and agency goals and objectives whether explicitly stated. Agency positions should be readily understood and easily applied.

RELIABLE

Regulations should be based on the best available knowledge from research and operational experience. The agency should take into account systems interactions, technological uncertainties, and the diversity of licensees and regulatory activities so that risks are maintained at an acceptably low level. Once established, regulation should be perceived by all stakeholders to be reliable and not unjustifiably in a state of transition. The NRC's regulatory actions should always be fully consistent with written regulations and should be promptly, fairly, and decisively administered so as to lend stability to the nuclear operational and planning processes.

November 7, 2003

NRC Organizational Values

Integrity	... in our working relationships, practices and decisions.
Excellence	... both in our individual and collective actions.
Service	... to the public, and others who are affected by our work.
Respect	... for individuals' roles, diversity, and viewpoints.
Cooperation	... in the planning, management, and work of the agency.
Commitment	... to protecting the public health and safety.
Openness	... in communications and decision making.

About the NRC

By enacting the Energy Reorganization Act of 1974, the United States Congress established the U.S. Nuclear Regulatory Commission (NRC or the Agency to regulate the commercial, industrial, academic, and medical uses of nuclear materials in accordance with the Atomic Energy Act of 1954. In so doing, Congress also defined the NRC's primary mission, which allows the nation to use nuclear materials for beneficial civilian purposes while ensuring that public health and safety and the environment are protected.

Mission

License and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

The NRC is headed by five Commissioners, who are appointed by the President of the United States and confirmed by the U.S. Senate to serve for five-year terms. The President designates one of the Commissioners to serve as Chairman of the NRC. Under the leadership of the Chairman and Commissioners, the NRC issues and oversees licenses for the following commercial, industrial, academic, and medical uses of nuclear materials:

- ✓ 104 civilian nuclear power reactors
- ✓ 36 non-power (research and test) reactors
- ✓ 47 uranium recovery sites
- ✓ 10 major fuel cycle facilities
- ✓ Approximately 4,400 medical, industrial, and research materials licensees

The NRC, certain States, and those who hold licenses to use nuclear materials share a common responsibility to protect the environment, and public health, and safety. Because NRC licensees actually use nuclear materials, they have the primary responsibility to handle and utilize them safely.

Thirty-three States have signed Agreements with the NRC under which they assume regulatory responsibility for the use of nuclear materials for industrial, academic and medical purposes. These Agreement States implement NRC regulations for more than 75 percent of all U.S. materials licensees. The NRC works closely with Agreement States to ensure a sound and consistent regulatory framework.

The NRC has sole responsibility for regulatory activities related to nuclear power plants, research reactors and fuel cycle facilities and for all security requirements related to uses of nuclear materials. The NRC also has a role in managing certain international uses of nuclear materials. For example, the NRC issues and oversees licenses for the import and export of nuclear materials,

and participates in multilateral safeguards and security inspections. The agency works closely with its international counterparts in these areas.

In fulfilling its responsibilities, the NRC focuses on its guiding Vision, as follows:

Vision

Excellence in regulating the safe and secure use and management of radioactive materials for the public good.

The NRC's Mission and Vision provide the framework for the agency's strategies and goals, which in turn guide the allocation of resources across the agency.

The Evolving Landscape

The many industries that utilize nuclear materials are experiencing change, particularly in the areas of energy production and waste management. In the next five years the nation is likely to see the following changes occur:

- ✓ The majority of operating nuclear power plants will have applied for license renewals to meet the nation's growing demand for energy production.
- ✓ The U.S. Department of Energy (DOE) will submit an application to construct and operate the Nation's first high-level waste (HLW) repository.
- ✓ Increasing quantities of radioactive waste will be transported and held in interim storage or permanent disposal sites.
- ✓ The nuclear power industry will show a growing interest in licensing and constructing new nuclear power plants and fuel cycle facilities.
- ✓ The NRC, Agreement States and licensees will devote increasing attention to the security of nuclear materials and facilities, including nuclear non-proliferation activities.
- ✓ Increasing numbers of medical, academic and industrial entities will use nuclear materials under the oversight of Agreement States.

The backdrop to these industry-specific changes is one of elevated security and heightened public concern about safety. The NRC recognizes that recent issues, ranging from the potential for terrorist activities to public concern about the adequacy of emergency preparedness plans for areas surrounding nuclear power plants, have contributed to increased public dialogue about the uses of

nuclear materials. The NRC is committed to building public confidence by sharing openly with the public its information and decision-making processes to the full extent that the law allows.

The manner in which the NRC regulates is also evolving. As the agency continues to learn from operational experience and develops more effective ways of assessing risks, it is better able to allocate its resources where they will have the greatest effect. The NRC continues to seek innovative ways to improve its effectiveness and efficiency. Toward that end, the agency is incorporating the President's Management Agenda and is taking on specific management challenges that have been identified through ongoing program evaluations.

Ensuring the protection of public health and safety has always been, and continues to be, the NRC's preeminent goal. Accordingly, safety is the most important consideration in evaluating license applications, licensee performance, and proposed changes to the regulatory framework. Since security is an essential aspect of commercial nuclear operations and activities, it also is a primary consideration in agency actions. Even as the agency works to improve its effectiveness at communication, internal management controls, and efficiency, it will take no action that would conflict with or undermine its safety mission.

All of these trends and issues have informed the development of this Strategic Plan for Fiscal Years 2004–2009.

Organization of the Plan

Over the next several years, the NRC will focus on a single strategic objective and five general goals that support that objective, as described below.

Each general goal begins with a discussion about the evolving landscape of issues affecting that particular goal. In each case, this discussion is followed by a description of the strategies and significant means by which the agency will achieve the given goal. This discussion concludes with a brief description of the methods by which the NRC will assess its progress, including a description of success and the associated outcomes and performance measures.

Appendix A augments the discussion of the agency's strategic objective and general goals by discussing key external factors that could affect the agency's ability to effectively execute on this Strategic Plan.

Appendix B describes the schedule of planned program evaluations the agency will use to adjust and refine its performance. Appendix C illustrates the close linkage between the NRC's annual performance goals and measures and the general goals described in this Strategic Plan.

Strategic Objective

Enable the use and management of radioactive materials and nuclear fuels for beneficial civilian purposes in a manner that
(1) protects public health and safety and the environment,
(2) promotes the security of our nation, and
(3) provides for regulatory actions that are effective, efficient, and open.

General Goals

I. Safety: Ensure protection of public health and safety and the environment.

II. Security: Ensure the secure use and management of radioactive materials.

III. Openness: Ensure openness in our regulatory process.

IV. Effectiveness: Ensure that NRC actions are effective, efficient, realistic and timely.

V. Management Excellence: Enhance the effectiveness and efficiency of corporate management to better support NRC's mission.

Long Term Outcomes

- ✓ *No acute radiation exposures resulting in fatalities.*
- ✓ *No releases of radioactive materials that result in significant radiation exposures.*
- ✓ *No releases of radioactive materials that cause significant adverse environmental impacts.*
- ✓ *No instances where licensed radioactive materials are used domestically in a manner inimical to the security of the United States.*
- ✓ *No significant licensing and regulatory impediments to the safe and beneficial uses of nuclear materials.*

I. Safety

Ensure Protection of Public Health and Safety and the Environment.

Ensuring the safe use of nuclear materials for civilian purposes is the NRC's primary goal. To achieve this goal, the NRC licenses individuals and organizations to use nuclear materials for beneficial commercial purposes, and then ensures that the performance of these licensees is at or above acceptable safety levels. This pertains to all licensees whether they use nuclear materials for power generation, medical therapies, industrial processes, or research. The NRC applies its regulatory activities in a graded manner consistent with the risk presented by specific uses, incorporating sound science and operating experience to ensure that licensees have adequate safety margins.

Risk is determined by answering three questions:
(1) "What can go wrong?"
(2) "How likely is it?"
(3) "What are the consequences?"

The domestic nuclear industries have continued to meet the NRC's outcomes. Nonetheless, new technologies, unforseen safety issues, or increased nuclear energy business activity may require new NRC strategies to ensure continuing safety performance in the future. Some important considerations in the coming years include:

- *Materials Degradation*

  - The majority of operating nuclear power plants are expected to apply for a 20-year extension of their license. The primary consideration in the license renewal process is to ensure that age-related degradation is monitored, managed, and controlled such that the current licensing basis will be satisfied for the renewal period. License renewal applications for aging plants call for analysis of the robustness, longevity and continued performance of reactor components as varied as electric cabling, instruments and controls, and piping, in addition to the containment structures themselves.

  - The importance of materials degradation issues is highlighted by recent experiences, including a cavity in a reactor vessel head which the licensee discovered during an inspection while the facility was shut down. Although this condition did not result in any release of radiation, lessons learned from it are resulting in increased inspection activities and expanded research into materials degradation issues.

- *HLW Transportation, Storage, and Disposal*

  - The DOE is preparing an application to establish the Nation's first repository for high-level nuclear waste at Yucca Mountain, Nevada. The NRC's preparation to review this application requires evaluation of a wide range of technical and scientific analyses.

- Sufficient interim storage capacity must be made available until a repository is licensed and ready to receive high-level waste. Toward that end, the NRC regulates various options for interim storage, including spent fuel pools on and dry casks at independent spent fuel storage installations (ISFSIs).

- The NRC must ensure the safety of spent fuel transportation casks. These casks must be evaluated, tested, and certified as being capable of storing and transporting spent fuel from reactor sites or ISFSIs to the national repository.

o *New and Evolving Technologies*

- New reactor designs are being submitted for review and possible licensing by the NRC. These next-generation designs require detailed analysis of their vulnerability to accidents and security compromises, as well as development of inspections, tests, analyses and acceptance criteria for their construction.

- The NRC is evaluating commercial gas centrifuge facilities that utilize new methods of manufacturing nuclear fuel for possible operation in the United States.

- The NRC is reviewing licensing applications for Mixed Oxide fuel (MOX) fuel facilities, to use fissile materials salvaged from decommissioned nuclear weapons to fabricate fuel assemblies for nuclear power plants, as a technique for reducing existing quantities of weapons-usable materials.

o *Operational Experience*

- The NRC continually reviews domestic and international operational experience, which can provide new information that can help identify potential new licensee-specific or generic safety issues.

- It is the responsibility of the NRC to ensure that its licensees are utilizing nuclear materials safely. The NRC is ensuring that safety is being regulated at an appropriate level by employing a multi-faceted approach to safety, which includes the following activities:

  • Developing and updating appropriate standards and Federal regulations to enable the safe use of nuclear materials, using defense-in-depth principles and appropriately conservative practices that provide a margin of safety.

  • Licensing individuals and organizations who intend to use nuclear materials for safe and beneficial civilian purposes.

  • Maintaining ongoing and consistent oversight of licensees, which includes inspection, enforcement and incident response activities, to ensure that they are following the applicable regulations and the conditions of their licenses to ensure safety, and to provide timely and appropriate event assessment and response.

In carrying out its safety mission, the NRC will continue to take the full range of actions at its disposal to ensure that a licensee's performance does not fall below acceptable levels. These actions range from ongoing licensing reviews and inspections to providing expanded oversight and enforcement, including issuing orders for corrective action, issuing shutdown orders, imposing civil penalties and/or criminal prosecution, or, when required, suspending or revoking the license.

The NRC recognizes that close cooperation among Federal agencies, State authorities (e.g., Agreement States), and local and Indian Tribal governments will lead to the most effective regulatory approach. The agency, therefore, works with other Federal agencies, like the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA), and DOE, the U.S. Departments of Justice, and Homeland Security (DOJ, and DHS), as well as State, local, and Tribal authorities to ensure appropriate coordination of safety and security measures at nuclear facilities.

Nuclear safety is, moreover, a global issue. As a result, the NRC closely cooperates with its international counterpart agencies and organizations, such as the International Atomic Energy Agency (IAEA), and other foreign regulatory bodies to share information, resources, best practices, and lessons learned from operating experience.

Strategies and Means

The NRC will employ the following strategies to ensure protection of public health and safety and the environment.

Safety Strategies

(1) Develop, maintain and implement licensing and regulatory programs to effectively protect public health and safety and the environment.

(2) Develop, maintain, and implement licensing and regulatory programs to resolve issues of radioactive waste management, including the high-level waste repository.

(3) Develop systematic improvements in NRC's regulatory program to ensure the safe use and management of nuclear materials.

(4) Use sound science and state of the art methods to establish risk-informed and, where appropriate, performance-based regulations.

(5) Effectively utilize regulatory programs and applied research to anticipate and resolve safety issues.

(6) Evaluate and utilize domestic and international operational experience and events to enhance decision-making.

(7) Conduct NRC oversight programs -- including inspections -- to monitor licensee performance, with a safety focus.

Means to Support Safety Strategies

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. The major programs include the licensing and inspection oversight programs, the incident response program, the Agreement States Program, and the ongoing research program. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Review all licensing requests (e.g., applications, amendments, renewals, decommissioning, termination and reactor operator) to confirm that proposed modifications are consistent with regulatory requirements. *[Supports Strategy 1, 2]*

- Implement the Reactor Oversight Process (ROP), the main program for overseeing nuclear power plant operation, to better identify significant performance issues and to ensure that licensees take appropriate actions to maintain acceptable safety performance. *[Supports Strategy 7]*

- Maintain trained inspectors who are stationed at the nuclear reactor and fuel cycle sites (resident inspectors) and in our four regional offices (regional inspectors). The resident inspectors oversee licensees' day-to-day activities, while region-based inspectors perform individual and team inspections in specialized areas. *[Supports Strategies 1, 2, 7]*

- Conduct emergency preparedness exercises that involve a wide array of Federal, State, and local agencies and emergency response personnel, and use cooperative intergovernmental relationships to appropriately balance and inform national response capabilities. *[Supports Strategy 7]*

- Maintain the readiness and capabilities of the NRC Operations Center and Regional Response Centers, which coordinate and monitor the agency's response to incidents and reportable conditions and licensees' actions to ensure safety at their facilities. *[Supports Strategy 7]*

- Conduct a program for the identification and resolution of reactor and materials generic safety issues (GSIs). *[Supports Strategies 3, 5]*

- Conduct research programs to identify, lead, and/or sponsor reviews that support the resolution of ongoing and future safety issues. Review safety issues that are emerging from the August 2003 blackout and develop recommendations to mitigate the effects of any future occurrences. Other safety research programs include evaluating the performance of spent fuel transportation casks under accident conditions, demonstrating a probabilistic risk assessment (PRA) methodology for spent fuel storage casks, investigating materials degradation issues and the safety of aging plants, evaluating the implications of international recommendations for radiation protection and new health effects research, risk-informing existing and future regulations, resolving issues related to reactor instrumentation and controls, verifying the increased safety of new reactor designs, and performing vulnerability assessments. *[Supports Strategies 3, 4, 5]*

- Review the effectiveness of reactor performance indicators (i.e., outcomes measuring success) in identifying plant performance issues, and make appropriate refinements, if needed, to assure the safety of licensed operations. Continue to collect and report licensee data for these performance indicators. *[Supports Strategy 3]*

- Conduct pre-licensing consultation and begin regulatory activity when the Yucca Mountain repository application is received. The activity level in this area could be impacted if DOE's application is significantly delayed, but is generally expected to increase significantly throughout the planning period. *[Supports Strategies 2, 3]*

- Complete technical reviews of new spent fuel dry storage systems to ensure that they are designed to protect against floods, tornadoes, high winds, temperature extremes, and other extreme events, and will be safe and secure for use at any licensed nuclear power plant site. *[Supports Strategy 2]*

- Conduct full-scale testing of spent fuel transportation truck and rail casks under accident conditions to verify the designs and modeling that has been performed. *[Supports Strategy 2]*

- Conduct periodic reviews of Agreement State programs to ensure that they are adequate and compatible with NRC's program. *[Supports Strategies 3, 4, 7]*

- Work closely with the Agreement States to develop consistent, risk-informed processes to review event information and identify safety issues for materials licensees. *[Supports Strategies 3, 4, 7]*

- Use the information from integrated safety analyses (ISAs) to implement a graded approach to monitoring and controlling activities at fuel fabrication facilities. The NRC will use the lessons learned from these analyses to develop more risk-informed oversight programs. *[Supports Strategies 3, 4]*

- Assess the key issues affecting the safe and cost-effective management of civilian low-level waste disposal to ensure that the uncertainty in obtaining uninterrupted access to licensed disposal sites does not adversely affect licensees' ability to operate and decommission their plants safely. There are three domestic low-level waste disposal facilities, located in Agreement States, that presently accept various types of low-level nuclear waste. *[Supports Strategies 3, 4]*

- Evaluate the risk significance of domestic and international operational events and trends in order to improve NRC programs. Specifically, the NRC will improve its ability to identify, prioritize, resolve, and communicate safety issues on a timely basis. *[Supports Strategies 3, 6]*

- Participate in domestic standards organizations, such as the American Society of Mechanical Engineers (ASME) and the Institute of Electrical and Electronics Engineers (IEEE), to develop consensus standards used by the nuclear industry, and with international organizations to determine whether substantial safety improvements can be identified and incorporated into NRC regulations. *[Supports Strategies 3, 6]*

- Work with international counterparts to exchange information, expertise, operating experiences and ongoing research, to recognize and respond to emerging technical issues and to promote best practices. Participate in the development and evaluation of international standards, to determine whether substantial safety improvements can be identified and incorporated domestically. *[Supports Strategies 3, 6]*

Assessment Method

The NRC's long-term safety outcomes are:

✓ *No acute radiation exposures resulting in fatalities*
✓ *No releases of radioactive materials that result in significant radiation exposures*[1]
✓ *No releases of radioactive materials that cause significant adverse environmental impacts*[2]

Success at achieving the safety goal will be evident based upon actual data for each of these parameters. The NRC will also use the following annual safety performance measures to assess trends in licensee performance related to the long-term safety goals.

- Number of significant events and incidents involving safety issues.
- Number of significant adverse industry trends in safety performance.
- Number of significant radiation exposures to the public and occupational workers from civilian uses and management of radioactive materials.
- Number of significant radiological releases to the environment from civilian uses and management of radioactive materials.
- Number of licensees with significant performance problems.

II. Security

Ensure the Secure Use and Management of Radioactive Materials.

Few areas of nuclear regulation have undergone as much change as the area of security since the terrorist attacks on September 11, 2001. To deal with initial concerns about the increased threat in the wake of those attacks, the NRC issued advisories and orders to its licensees and participated in many Federal ad hoc and standing committees and task groups to enhance National response and international decisions. The agency continues to work to strengthen relationships among the various Federal, State, and local agencies, including the new

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(1) "Significant radiation exposures" are defined as those that result in unintended permanent functional damage to an organ or a physiological system as determined by a physician in accordance with Abnormal Occurrence Criterion I.A.3.

(2) Releases that have the potential to cause "adverse impact" are currently undefined. As a surrogate, we will use those that exceed the limits for reporting abnormal occurrences as given by AO criterion 1.B.1 {normally 5,000 times Table 2 (air and water) of Appendix B, Part 20}.

Department of Homeland Security (DHS), that have assumed responsibility for protecting nuclear facilities and activities and responding to incidents when they occur.

A new Office of Nuclear Security and Incident Response (NSIR) was created as the office with lead responsibility for security. The NRC achieved many significant improvements in the secure use and management of nuclear materials since the attacks, and the NRC anticipates that our ongoing efforts in this area will continue to be substantial throughout the strategic planning period.

The primary challenge facing the NRC in the coming years is to emerge from this period of temporary measures, determine what long-term security provisions are necessary, and revise its regulations, security enhancements, orders and internal procedures to ensure public health and safety and the common defense and security in the elevated threat environment. In particular, the NRC will focus its efforts on the following activities:

- Complete the identification of vulnerabilities at licensed facilities.
- Revise requirements to provide additional protection where needed.
- Explore improved methods of communicating sensitive information to licensees.
- Enhance controls on high-risk radiation sources.
- Develop more formal, long-term relationships with Federal, State, and local organizations with shared responsibilities for protecting nuclear facilities and activities.

The NRC may also be called upon to expand its role in international activities related to the security of nuclear materials and facilities. Today, the agency participates in the formulation of foreign policy guidance and shares with DOE the responsibility for providing international assistance in nuclear safety and safeguards. The agency also reviews applications and issues import and export licenses for nuclear materials and equipment. The heightened level of attention to these types of activities may affect the NRC's security strategies over the next several years. The NRC's involvement with the IAEA on nuclear safeguards, non-proliferation, and international regulatory standards is also likely to be affected.

The agency has contributed significantly to integrated efforts to protect against terrorist attacks on American interests. The NRC is maintaining state-of-the-art expertise in matters of both domestic and international security. Although the agency's resource demands for enhancing security and related programs have begun to level off, they will not decline significantly until the NRC completes its review of the agency's safeguards program, revises the relevant requirements and ensures that a robust pipeline of new employees who are trained in security and safeguards techniques is in place.

Strategies and Means

The NRC will employ the following strategies to ensure the secure use and management of radioactive materials.

Security Strategies

(1) Use relevant intelligence information and vulnerability analyses to determine realistic and practical security requirements and mitigation measures.

(2) Conduct realistic oversight activities and exercises to evaluate licensee security performance.

(3) Enhance the handling and storage of sensitive security and other pertinent information and the communication of such information to licensees and States.

(4) Support interagency efforts to develop an integrated approach to the security of nuclear facilities and radioactive materials licensee efforts with appropriate federal, State, and local government assets.

(5) Use a risk-informed, graded approach to establish appropriate regulatory controls for the possession, handling, import, and export of radioactive materials.

(6) Coordinate with Federal and international counterparts to provide appropriate security and control to prevent the proliferation of special nuclear materials and nuclear technology and to reduce the potential for malevolent use of high risk radioactive material.

Means to Support Security Strategies

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Continue to conduct inspections through the enhanced Baseline Inspection Program to establish and confirm the security performance of licensees. The NRC will conduct followup reviews, inspections, or investigations as needed when security problems are identified. *[Supports strategies 2,5, and 6]*

- Increase the frequency of conducting full safeguards performance evaluations (including force-on-force exercises) at appropriate nuclear facilities that involve Federal, State, and local law enforcement and emergency planning officials. The NRC will increase the use of electronic aids in enhancing the realism of exercises. The NRC's current information on licensees' security programs and their ability to protect against the design-basis threat. *[Supports Strategies 1,2, and 4]*

- Complete vulnerability assessments and determine the consequences of a range of threats against existing safety, safeguards, and security requirements. The NRC will share its results with appropriate Federal partners to support an integrated national posture for protection of the Nation's critical infrastructure. *[Supports Strategies 1and 4]*

- Work with DHS to define, develop, and implement local, integrated response plans and a National Response Plan that integrates Federal, State, and local government assets. *[Supports Strategies 4 and 6]*

- Work with Agreement and non-Agreement States on security measures related to NRC licensed facilities and activities within their States. *[Supports Strategy 4]*

- Maintain ongoing communication with the intelligence community and DHS to include a substantially increased number of partners involved in integrated security response for nuclear facilities and activities. *[Supports Strategies 1,3, and 4]*

- Assess the threat environment to maintain an adequate regulatory framework, utilizing new information from domestic research and cooperative research programs with international partners. *[Supports Strategies 1,3,4,5 and 6]*

- Collaborate with DOE and other agencies to develop and implement a national registry of radioactive sources of concern and establish or improve the controls on risk-significant radioactive materials to prevent their malevolent use. *[Supports Strategies 1, 4 and 5]*

- Continue support and active involvement in international security activities, including support of IAEA non-proliferation initiatives and bilateral physical security inspections of special nuclear materials that originate in the United States. *[Supports Strategy 6]*

- Expand electronic access to various channels of integrated intelligence information. The information developed through this process is critical for the NRC and its licensees to maintain a current awareness of potential threats to licensed facilities and activities. *[Supports Strategies 1 and 3]*

- Conduct focused recruiting efforts to hire the full range of skills and expertise needed to operate in a potentially elevated threat environment. *[Supports Strategies 1-6]*

- Identify and develop key information technology (IT) investments that will enhance the storage, handling, and communication of sensitive security information both within and external to the Agency. *[Supports Strategy 3]*

Assessment Method

The NRC will have successfully achieved this goal when prevention and/or mitigation measures are in place for identified vulnerabilities and when clearly defined roles and responsibilities are in place for federal, state and local entities and licensees within the context of continued attainment of the following long-term security outcome:

✓ *No instances where licensed radioactive materials are used domestically in a manner inimical to the common defense and security of the United States*

To assess the agency's success in achieving the security goal, the NRC will use the following key annual performance measures:

- Number of significant events and incidents involving security issues.
- Number of identified losses or thefts of high-risk radioactive materials.

III. Openness

Ensure Openness in Our Regulatory Process

The NRC views nuclear regulation as the public's business and, as such, it must be transacted openly and candidly in order to maintain the public's confidence. The goal to ensure openness explicitly recognizes that the public must be informed about, and have a reasonable opportunity to participate meaningfully in, the regulatory process.

An example of recent efforts to ensure openness is highlighted below:

COMMUNICATIONS INVOLVING DAVIS BESSE

When corrosion was discovered in the Davis Besse pressure vessel head, the NRC responded in an open fashion. An oversight panel of experts was convened in April of 2002, to study the degradation problem, and their reports and meetings were regularly posted to our web page. In response to this incident, we have:

- ✓ Held over 50 public meetings, most in the vicinity of the plant
- ✓ Issued 60 news releases
- ✓ Published 13 monthly newsletters
- ✓ Developed a dedicated web page
- ✓ Briefed dozens of Congressional, State and local representatives
- ✓ Met with the Governor and other State officials
- ✓ Granted numerous media interviews
- ✓ Responded to thousands of e-mails, telephone inquiries and written correspondence from concerned citizens

Over the next several years, it is expected that the public's interest in nuclear facility safety, security, and nuclear waste will increase because of emerging issues. In particular, these issues include the anticipated DOE license application for an HLW repository at Yucca Mountain, transportation of spent fuel, the increase in the number of applications to extend the operating life of reactors, applications for a variety of fuel cycle facilities, and the increase in applications for reactor facilities.

Concern about terrorist attacks on nuclear facilities has increased dramatically in recent years. For instance, some members of the public believe that the close proximity of some nuclear power plants to urban centers might present serious difficulties in trying to evacuate large numbers of people. As a result, both security and emergency planning issues have become increasingly important to residents and government officials. The NRC must concentrate its

efforts on assuring the public that its rigorous oversight and defense-in-depth approach ensures that the public is adequately protected in the event of a potential terrorist strike or operating event, and that emergency plans surrounding the facility are well conceived and will work.

In light of increased terrorist activity worldwide, the agency has had to reexamine its traditional practice of releasing almost all documents to the public. While all important safety information is shared with the public, the NRC will continue to work with DHS and other agencies to develop and implement any new guidance or requirements that may impact our strategy to communicate with the public in an open fashion. Although a small amount of information that clearly could assist potential terrorists will be withheld, the NRC will continue to make the majority of information under review available to the public.

The focus on security has arisen at a time of renewed interest in nuclear power. Some utilities are applying to the NRC for early site permits for new reactors and existing plants are extending their licenses so they can operate for an additional 20 years. As the NRC processes these requests, it will face a significant public confidence challenge associated with concerns about vulnerability to many different types of terrorist attacks without disclosing information that could substantially aid terrorists.

Internal and external openness are equally important to NRC management. The Inspector General's 2002 Safety Culture and Climate Survey revealed that the majority of NRC employees who responded to the survey feel that the agency has not established a climate where its staff can challenge traditional ways of doing things, or that innovative ideas can fail without penalty. A task group, which the agency formed to address key areas for improvement in the survey results, suggested that focusing on empowerment (defined as the amount of authority employees have to do their jobs and the trust they receive from management) could be a pivotal factor in improving employee perception in this area.

While some members of the public may not agree with the agency's actions or decisions, the NRC firmly believes that transparency in its communications and early and meaningful public involvement in the regulatory process is critical. The agency is committed to keeping the public informed and believes that a responsible, effective regulatory process must include an involved and informed public.

The NRC will employ the following strategies to ensure openness in its regulatory processes.

Openness Strategies

(1) Provide accurate and timely information to the public about the uses of and risks associated with radioactive materials.

(2) Enhance the awareness of the NRC's independent role in protecting public health and safety and the environment.

(3) Provide accurate and timely information about the performance of the licensees regulated by the NRC.

(4) Foster a work environment that values differing opinions and rewards safety-conscious thinking.

(5) Provide a fair and timely process to allow the public to comment on and influence NRC decision-making in matters not involving Safeguards Information, classified information or proprietary information.

(6) Provide a fair and timely process to allow authorized stakeholders to comment on and influence NRC decisionmaking in matters involving safeguards information, classified information or proprietary information.

(7) Obtain early public involvement on issues most likely to generate substantial interest, and promote two-way communication to enhance public confidence in our regulatory processes.

Means to Support Openness Strategies

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Establish and support a Director of Communications reporting to the Chairman, responsible for enhancing the agency's communications internally and with the public, the media, and Congress. *[Supports Strategies 1, 3, 4, 5, 6]*

- Actively engage the public, particularly local residents, before actions are taken. For example, before expected early site permit applications are received for nuclear power reactors, inform residents of the agency's role in the regulatory process, and the schedule involved in the licensing process. *[Supports Strategies 1, 4, 6]*

- Host public meetings at headquarters and in Nevada regarding the proposed HLW repository at Yucca Mountain, including workshops to assist in furthering an understanding of the NRC's regulatory role. *[Supports Strategy 6]*

- Implement and maintain the HLW Licensing Support Network, a system that stores documents related to the HLW repository, while creating an effective means for making such documents and publications available to the public. *[Supports Strategies 2, 4]*

- Hold annual workshops, open to the public (such as the Regulatory Information Conference and the Nuclear Safety Research Conference), to bring together diverse groups of stakeholders to discuss the latest trends in industry performance and cutting-edge research. *[Supports Strategies 1, 3, 4, 5]*

- Improve communications about licensee operating events and their significance, using easily understood risk comparisons, plant features, and regulatory controls to put any situations into their proper context. Develop and implement agency-wide guidelines that will improve

the agency's ability to communicate risk insights and other health and safety issues with stakeholders. *[Supports Strategy 3]*

- Develop communication plans for key program activities that include key messages and creating time lines for public involvement opportunities. *[Supports Strategies 1 and 4]*
- Increase the quality and quantity of communications with the staff by redesigning the internal Web site, expanding e-government, emphasizing frequent feedback, and committing to face-to-face, two-way communications between management and staff. *[Supports Strategies 3 and 4]*
- Maintain and update the external web site with timely information. *[Supports Strategies 1, 3, and 4]*
- Continue to provide training opportunities for the staff to develop more effective communications skills. *[Supports Strategies 4]*

Assessment Method

Openness will be achieved successfully when public feedback on major agency actions indicates that the public understands the agency's Mission and has had opportunities to effectively express its views.

The NRC plans to develop and implement a means of gauging public confidence in its activities to identify areas that require more public engagement and dialogue. This may be achieved with a survey or other measurement instrument, for which findings will be reflected in new or revised program initiatives.

The NRC will have successfully achieved internal openness when feedback from NRC employees indicates that the agency's work environment fosters innovative ideas and creates an atmosphere where they feel comfortable speaking up about any issue — particularly those involving safety.

For internal stakeholders, the NRC will rely on the Inspector General's survey of the NRC's safety culture, as well as individual office measurement techniques, to determine its success in making the agency an envisionment where innovation and safety conscious thinking are emphasized and rewarded.

✓ *(The NRC is currently working to develop a long term outcome for this goal; we specifically invite public comment to assist in articulating a measurable outcome for openness.)*

To assess the agency's success in achieving the openness goal, the NRC will adopt annual performance measures in the following areas:

- Extent to which the public understands the NRC mission.
- Extent to which NRC employees can raise safety issues and challenge traditional ways of doing business.

- Extent to which the public has an opportunity for effectively expressing its views.
- Extent to which authorized stakeholders have an opportunity for effectively expressing their views on matters involving Safeguards Information, classified information, or proprietary information.
- Extent to which non-sensitive, unclassified NRC information that is relevant to the regulatory process is provided to the public in an accurate and timely manner.

IV. Effectiveness

Ensure That NRC Actions Are Effective, Efficient, Realistic and Timely.

Over the next several years, the NRC anticipates a significant change in agency workload. Licensing requests of unprecedented technical complexity are expected, including the Department of Energy's application to license the Yucca Mountain HLW repository and requests to license the next generation of nuclear reactors. Security demands are becoming more complex, requiring diverse professional expertise and close coordination with other Federal, State, and local agencies. Increases in both the frequency and the extent of stakeholder involvement in the NRC's regulatory processes are expected as Federal e-government initiatives take hold and the agency works to improve openness.

These and other challenges are coming at a time when the role of the Federal Government is changing. Initiatives such as the Government Performance and Results Act (GPRA) and the President's Management Agenda (PMA) are challenging Federal agencies to become more effective and efficient, and to justify their budget requests with demonstrated program results. The drive to improve performance in Government, coupled with increasing demands on the NRC's finite resources, clearly indicates a need for the agency to become more effective, efficient, realistic, and timely in its regulatory activities.

Effectiveness means achieving the desired outcome from a program, process, or activity.

The concept of effectiveness applies to all levels of the agency, from individual actions to programs to agency wide initiatives. At the program level, for example, effectiveness refers to the degree of success in achieving program goals with the resources provided, and requires careful alignment of planned activities to intended program results to ensure that the right work is being performed.

Efficiency refers to productivity, quality and cost characteristics that together define how economically an activity or process is performed. Improved efficiency can be demonstrated by obtaining the same results with fewer resources or better results with the same resources.

The NRC recognizes that the efficiency of its regulatory process is important to the regulated community, as this influences both the regulatory uncertainty and costs borne by licensees and applicants. Efficiency is also important to other stakeholders, such as Federal, State, and local

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agencies and the public, due to its key role in allowing the NRC to meet stakeholder expectations regarding timely, accurate, and responsible agency actions. While the NRC will never compromise safety for the sake of increased efficiency, the agency works to improve the efficiency of its regulatory processes whenever practicable.

Timeliness, a key product of efficiency, means acting within a predictable time frame and without unnecessary delays.

NRC actions must be timely and realistic to support the agency's goal of enabling the safe, beneficial use of radioactive materials. The timeliness of agency actions is key to providing a stable, reliable, and responsive regulatory environment that does not impose undue burden. The agency has established timeliness goals for many of its regulatory activities and regularly tracks its performance in meeting these goals.

The NRC has developed a risk-informed regulatory implementation plan (RIRIP), which applies risk analysis to a wide variety of agency programs. The RIRIP considers the goals and objectives of the agency's Strategic Plan and the Probabilistic Risk Analysis Policy Statement, provides guidance for selecting appropriate NRC programs for risk-informing, and outlines a process for applying risk insights to targeted programs.

Realistic regulatory activities focus on safety and security while avoiding unnecessary conservatism.

NRC regulations have been established using defense-in-depth principles and conservative practices that, in some cases, have led to requirements that may be in excess of what is necessary to reasonably ensure the protection of public health and safety. Advances in risk analysis and scientific understanding, as well as lessons learned through operating experience, are used to help the agency focus on the most safety significant requirements and, in certain instances, to relax those requirements that offer little safety benefit. Throughout the regulatory process, the NRC seeks to impose only those requirements that are necessary to achieve the agency's mission. The NRC is largely funded through fees, and is committed to improving its programs and processes to help control the financial burden imposed on the regulated community. However, emerging demands and external factors may still require the agency to increase fees to fulfill its safety mission.

The NRC does not believe that efforts to improve efficiency, timeliness, and realism conflict with the agency's safety and security goals. In fact, initiatives related to this general goal should serve to sharpen the agency's focus on safety and security ensure that available resources are optimally directed at the mission. Successful initiatives will require an internal culture that embraces change, questions traditional practices, empowers staff to make decisions, and encourages innovation and diverse views. While the NRC has taken the initial steps to foster such a culture, a continuing commitment from agency management will be needed to ensure lasting change.

The NRC will employ the following strategies to ensure that its actions are effective, efficient, realistic, and timely.

Effectiveness Strategies

(1) Use state-of-the-art methods and risk insights to improve the effectiveness and realism of NRC actions.

(2) Improve NRC regulation by adding needed requirements and eliminating unnecessary requirements.

(3) Use performance-based regulation to minimize unnecessarily prescriptive requirements.

(4) Use realistically conservative safety-focused research programs to resolve safety-related issues.

(5) Enhance cooperation with State and Tribal governments and international counterparts.

(6) Minimize unnecessary regulatory or jurisdictional overlap.

(7) Anticipate challenges and respond quickly to changes in the regulatory and technical environment.

(8) Make timely regulatory decisions.

(9) Foster innovation among the NRC staff to systematically irnprove the NRC's regulatory programs.

Means to Support Effectiveness Strategies

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Conduct systematic evaluations to assess the effectiveness of the agency's programs in relation to its strategic and general goals. In addition to dedicated internal resources, the NRC will retain outside expertise, as needed, to provide objective, independent assessments and recommendations to improve program performance. *[Supports Strategies 1,2,6,7 and 8]*

- Use independent, internal agency resources such as the Office of the Inspector General (OIG) and, where deemed appropriate by the Commission, relevant advisory committees to critically review whether programs are effective, processes are efficient, and regulatory decisions are sound and realistic. *[Supports Strategies 1,2,6,7 and 8]*

- Establish specific goals for continuous improvement in programs and processes. *[Supports Strategies 8 and 9]*

- Select several key processes each year for detailed review to determine the most efficient means of delivering desired program outcomes. *[Supports Strategies 2,6,8 and 9]*

- Use risk-informed and performance-based approaches, where appropriate, to ensure that all elements of the NRC regulatory programs are conducted commensurate with an appropriate level of risk. For example, we may make some NRC regulations less prescriptive and provide licensees with increased flexibility in meeting certain regulatory requirements. *[Supports Strategies 1,2,3 and 4]*

- Implement initiatives to encourage staff innovation and diverse views, to empower staff to make decisions, and to effectively manage change. *[Supports Strategy 9]*

- Expand the use of information technology tools to improve efficiency throughout the agency. This is further discussed in the Management Excellence section of this plan under "Expanded Electronic Government". *[Supports Strategies 1 and 8]*

- Work cooperatively with the Agreement States through the National Materials Program to agree on priorities for enhancing the regulatory framework for materials licensees. *[Supports Strategies 5,6 and 7]*

- Encourage stakeholders to identify actions, such as inadequate guidance or an untimely response to stakeholder needs, which may have resulted in unnecessary cost or uncertainty. Consider suggested improvements to the regulatory framework and will take action to address regulatory practices that impose unnecessary burden. *[Supports Strategies 2,6 and 7]*

- Participate in information exchanges and pursue cooperative research, both domestically and internationally, to avoid duplication of effort, leverage resources and share facilities wherever possible. *[Supports Strategies 5 and 6]*

- Incorporate effectiveness and efficiency measures in the NRC planning and performance measurement structure throughout the agency. *[Supports Strategy 8]*

Assessment Method

The NRC has established the following long-term outcome for this area:

✓ *No significant licensing and regulatory impediments to the safe and beneficial uses of radioactive materials*

Many factors could contribute to licensing and regulatory impediments, such as an inadequate regulatory framework, an ineffective program, or an inefficient process that results in an untimely regulatory decision. The NRC is committed to proactively addressing such issues through initiatives related to this goal, and will also monitor the regulated community for instances where agency actions may have unnecessarily impeded licensees and applicants. In conducting this

monitoring, the NRC may consider the results of self-assessments and external assessments, feedback from stakeholders (including the public), and Congressional direction as well as other sources.

The NRC will have successfully achieved this general goal when the agency establishes appropriate baselines and demonstrates a pattern of continuous improvement in the effectiveness, efficiency, realism, and timeliness of NRC actions; when all NRC programs meet a standard for effectiveness that considers program purpose, desired outcomes, and demonstrated results relative to the strategic and general goals; and when monitoring efforts identify no significant licensing and regulatory impediments to the safe and beneficial uses of radioactive materials.

The agency will adopt annual performance measures in the following areas to assess its success in meeting this general goal:

- Indicators of more effective and efficient activities and realistic decisions
- Timeliness indicators on regulatory decisions
- Indicators that an NRC program has potentially impeded the safe and beneficial uses of radioactive materials

Goals and measures will incorporate a philosophy of continuous improvement in the effectiveness, efficiency, realism, and timeliness of NRC actions. Baseline information will be established as needed to assess progress relative to this goal.

V. Management Excellence

Enhance the Effectiveness and Efficiency of Agency Management to Better Support the NRC's Mission.

The NRC strives for management excellence comparable to the agency's technical excellence. In setting this goal, the Commission considered the management and support needed to achieve the agency's other general goals, preexisting management challenges, and other initiatives identified by central organizations such as GAO, OMB, and Office Personnel Management (OPM). This goal includes strategies for the management of human capital, competitive sourcing, improved financial management, expanded electronic government, budget and performance integration, and internal communications.

Over the next 5 years, the NRC must deal with a variety of issues across the management spectrum. Among these, the greatest challenges will be to acquire, sustain and develop the agency's highly skilled and diverse technical workforce and to strengthen its information technology (IT) infrastructure. The NRC will support its workforce with a high quality, cost-effective administrative infrastructure. Strategies will focus on enhancing individual and collective productivity with the appropriate tools, and employing innovative and sound management practices.

Strategies and Means

The NRC will employ a variety of strategies, resources, skills, processes, and technologies to enhance the effectiveness and efficiency of agency management in the following areas:

i. Management of Human Capital

The NRC's technical, engineering, legal, and administrative workforce possesses detailed knowledge and a host of distinct technical skills that enable the agency to fulfill its mission. To maintain this expertise and respond to emerging needs, the NRC will need to build both its leadership corps and its staff in areas as diverse as nuclear engineering, nuclear safeguards and security, risk assessment, health physics, geochemistry, hydrology, materials engineering, law, information technology, financial management and other administrative skills. These, individuals will achieve their greatest effectiveness when they are deployed appropriately, are fully engaged in fulfilling the NRC's mission requirements, and are suitably recognized for their performance. For this reason, the agency periodically assesses its management of human capital, looking for ways to make improvements that will better support the achievement of the mission.

Human Capital Strategies:

(1) Optimize the agency's organizational structure to facilitate achievement of performance goals.

(2) Use innovative recruitment, development, and retention strategies to achieve a high quality, diverse work force with the skills needed to achieve our mission.

(3) Develop the agency's current and future leaders.

(4) Strengthen managerial and supervisory accountability for setting individual and organizational performance expectations and for providing timely and complete feedback.

(5) Foster a work environment that is free of discrimination and provides opportunities for all employees to optimally use their diverse talents in support of the NRC's mission and goals.

Means to Support Human Capital Strategies:

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Conduct periodic, systematic analyses of the organizational structure to ensure that the staff is deployed in the most effective and efficient way to respond to changing mission requirements. *[Supports Strategy 1]*

- Forecast the staffing levels and critical skills needed to accomplish ongoing and new work, including the specific expertise needed to review license applications for new types of

facilities and to regulate domestic nuclear security in the changing threat environment. *[Supports Strategy 2]*

- Use executive development and succession planning to create a diverse cadre of skilled leaders who are committed to achieving the agency's mission, goals, and strategies. We will continue to offer an Intern Program for qualified entry-level employees, a Leadership Potential Program to begin the development of future leaders, and a Senior Executive Service (SES) Candidate Development Program, to develop and maintain a pool of high-potential candidates who are prepared for appointment to SES positions. *[Supports Strategy 3]*

- Maintain a dynamic program of employee training and development to ensure NRC staff acquire and maintain the competencies needed to implement the strategic plan. *[Supports Strategy 2]*

- Devise an accountability system with defined roles, responsibilities, desired outcomes, and a process for evaluation and continuous improvement. *[Supports Strategy 4]*

- Measure the extent to which recruitment, development, and retention strategies increase and maintain the diversity of the staff at all levels. *[Supports Strategy 5]*

- Provide equipment, facilities, and administrative services to maintain a healthy, safe, secure, and accessible physical work environment. *[Supports Strategy 5]*

ii. Competitive Sourcing

The NRC will continue the competitive acquisition of skills and services as an element of a comprehensive human capital strategy. The agency will focus its use of competitive sourcing to ensure efficiencies and bolster needed skills for the coming years.

Human Capital Strategies:

Use competitive sourcing to improve efficiency of commercial activities while ensuring organizational effectiveness.

Means to Support Human Capital Strategies:

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- We will implement a competitive sourcing plan based on criteria for identifying commercial activities to be considered for competition.

- We will promptly award contracts for commercial activities identified when performance by the private sector is determined to be more cost-effective than in-house performance.

iii. Improved Financial Performance

Accurate and timely financial information to support operating and policy decisions is critical to achieving the NRC's effectiveness goal. The effectiveness of the agency's financial management practices directly affects the fees borne by licensees, as well as the burden on the taxpaying public.

Human Capital Strategies:

(1) Provide accurate, timely, and more useful financial information including cost information to agency managers and use such information for NRC decision-making.

(2) Use financial systems and processes to ensure that the NRC's financial assets are adequately protected consistent with risk.

Means to Support Human Capital Strategies:

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Assess needs and identify opportunities for the agency's next generation of core financial management system software. *[Supports Strategies 1and 2]*
- Evaluate options and identify opportunities to streamline the process for establishing license fees. *[Supports Strategy 1]*
- Improve the agency's approach to cost accounting and develop financial and automated tools to help managers integrate cost information into decisions. *[Supports Strategies 1and 2]*

iv. Expanded Electronic Government

The NRC's IT infrastructure is facing heightened demands from both the agency's staff and external stakeholders:

- Increased requirements to conduct business electronically, manage information more effectively, be open in our agency processes, and ensure information security
- The expanding needs of a mobile workforce
- The unprecedented requirements to provide a vast amount of information in the Licensing Support Network and Electronic Hearing Docket for the HLW repository proceedings.

Human Capital Strategies:

(1) Strengthen enterprise architecture, while first considering optimal business processes, to better inform agency information technology/information management investment decisions.

(2) Participate in and influence E-government initiatives that are applicable to the NRC.

(3) Adopt government-wide information technology solutions where cost-effective.

(4) Expand and strengthen information security capabilities to ensure that effective information protection is in place.

(5) Make it easier for staff to acquire, access, and use information needed to perform their work.

(6) Improve the ability of the NRC to conduct business electronically with external entities.

(7) Provide external stakeholders the ability to easily access the agency's publicly available information.

Means to Support Human Capital Strategies:

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Maintain a reliable and dependable set of core information technology systems to support agency operations. *[Supports Strategies 4, 5 and 6]*
- Develop and implement a digital data management system that will support the growing workload of future licensing and adjudicatory processes. *[Supports Strategy 6]*
- Use secure Web technology to improve service and access to information. *[Supports Strategy 7]*
- Provide an IT infrastructure that supports increasing opportunities for employee telecommuting and other offsite work, including that of inspectors. *[Supports Strategies 3 and 5]*
- Implement a new enterprise architecture for the agency. *[Supports Strategy 1]*

v. Budget and Performance Integration

The GPRA calls upon Federal agencies to closely align their resource allocation decisions with performance outcomes. The NRC has put in place several key processes to ensure such alignment, and is now focusing its efforts on effective implementation.

Human Capital Strategies:

1) Improve linkage of individual and organizational performance standards to NRC's Budget and Performance Plan.

2) Use and improve the Planning, Budgeting, and Performance Management (PBPM) process including better integration of performance results into NRC planning and budgeting.

Means to Support Human Capital Strategies:

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Improve the performance management system for senior executives by aligning individual performance objectives with organizational and agency goals. This system will lead to improved communications with employees regarding how individual goals and accomplishments link with those of the agency. *[Supports Strategy 1]*

- Develop and conduct training on improved methods for internal goal alignment and performance measurement. *[Supports Strategy 1]*

- Charge the full budgetary cost of work to mission accounts and activities. *[Supports Strategy 2]*

- Use the insights gained from OMB's Program Assessment Rating Tool (PART) and other program assessments to ensure alignment of program outcomes to long-term agency goals and to inform the resource allocation process. *[Supports Strategies 2]*

vi. Internal Communications

NRC management recognizes that it must strengthen its internal communication methods to support a culture of openness and innovation. These results of a recent IG survey supports this need. Therefore, we are working to enhance internal communications and the work environment to improve the agency's efficiency and effectiveness.

Human Capital Strategies:

1) Improve the effectiveness of communications throughout the NRC.

2) Enhance communication about NRC's vision, values (integrity, excellence, service, respect, cooperation, and commitment), and expectations to address the full range of NRC's strategic goals and to achieve alignment on desired outcomes.

Means to Support Human Capital Strategies:

The NRC has developed and implemented a number of programs and initiatives in order to continue to successfully achieve this goal. Examples of important activities to be conducted in these programs during this strategic planning period include:

- Establish a Communications Council to plan, coordinate, and implement our strategies for improving internal communications. This Council will comprise office representatives who share best practices, create multiple communications paths for important issues, and help to ensure that timely and accurate information is provided to everyone in the agency. *[Supports Strategy 1]*

- Take advantage of opportunities in daily work, meetings, and other activities to communicate and reinforce the agency mission and values. This will be accomplished in a variety of ways, including messages on the internal Web site, e-mail messages to the staff, newsletters, announcements, posters, and other printed material. *[Supports Strategy 2]*

Assessment Method

The NRC will have successfully achieved the goal of management excellence when the effectiveness and efficiency of agency management are demonstrated by the following states.

Management Excellence

Management of Human Capital	A skilled, diverse, high-performing workforce that can be deployed as needed to meet current and emerging mission requirements.
Competitive Sourcing	Cost-effective performance of commercial activities.
Improved Financial Management	Improved accountability through annual financial statements that receive an unqualified audit opinion
Expanded Electronic Government	A secure IT infrastructure that supports agency business processes, improves stakeholder access, and operates efficiently
Budget and Performance Integration	Seamless integration of the budget and performance plan
Internal Communications	Internal communications that meet employee expectations for understanding the agency's mission and their role in achieving it

The NRC will assess the effectiveness and efficiency of its management strategies through an annual, systematic self-assessment process patterned after the success criteria defined in the management scorecards from the Office of Management and Budget. The agency will also augment this self-assessment process with information from the periodic OIG safety culture and climate survey, as well as individual office assessments that target specific areas for improvement, and informal feedback.

✓ *The NRC is working to develop Long Term Outcomes for this goal; we specifically invite public comment to assist in articulating measurable outcomes for Management Effectiveness.*

Appendix A. Key External Factors

The NRC's ability to achieve its goals depends on a changing equation of industry operating experience, national priorities, market forces, and availability of resources. This appendix discusses significant external factors, all of which are beyond the control of the NRC and could have an impact on the agency's ability to achieve its strategic goals.

Receipt of New Reactor Operating License Applications
If the NRC receives a substantial increase in new reactor operating license applications, significant reallocation of resources would be necessary to provide 1) timely review of the applications, and 2) inspection of construction activities. In addition, the high level of public interest likely to be associated with such applications would require significant efforts by the NRC to keep stakeholders informed and involved in the licensing process.

Major Operating Incident (domestic or international)
A significant safety incident could cause an unexpected increase in safety and security requirements, which would likely change the agency's focus on initiatives related to its five general goals until the situation was stabilized. Because NRC stakeholders (including the public) are highly sensitive to many issues regarding the use of radioactive materials, even events of relatively minor safety or security significance may sometimes require a response that consumes considerable agency resources.

Significant Terrorist Incident
A significant terrorist incident anywhere in the United States could significantly alter the Nation's priorities. This, in turn, could affect significance levels, a need for new or changed security requirements, or other policy decisions that might impact the NRC, its partners, and the industry it regulates. In particular, the impact on State regulatory and enforcement authorities might affect their ability to work with the NRC in achieving its goals.

A significant terrorist incident at a nuclear facility or activity anywhere in the world would likely result in similar changes in the NRC's priorities, and potentially in U.S. policy regarding export activities, the NRC's role in international security, and/or requirements for security at U.S. nuclear power plants.

Timing of DOE Application for the High-Level Waste Repository at Yucca Mountain
The proposed repository for spent nuclear fuel represents a major effort for the NRC in planning, review, analysis, and ultimately decision making regarding the licensing of the facility. The agency has begun to ramp up this effort in response to pre-application activities by the U.S. Department of Energy. The timing of DOE actions will heavily influence the NRC's resource allocation decisions over the next several years. Acceleration or delay in DOE's activities will most likely require reprogramming of NRC resources, which may affect other programs that are directly associated with achieving the agency's goals.

U.S. Legislative Initiatives

Numerous legislative initiatives under consideration by Congress could have a major impact on the NRC. In particular, the Nuclear Security Act, Homeland Security initiatives, and evolving energy policy will undoubtedly affect the agency's priorities and workload. Increasing interest in diversified sources of energy and energy independence could lead to an increase in license applications for nuclear power plants. Any attendant increase in resources devoted to license review and analysis might affect the agency's ability to achieve its goals for this planning period.

In addition, over the past several years, Congress has engaged in substantial discussion and review regarding the possibility of transferring oversight responsibility for some nuclear facilities from DOE to the NRC. The Strategic Plan does not account for such a transfer, which would significantly affect the agency's resource allocation, workload, and human capital choices during this planning period.

Appendix B. Program Evaluations

- Schedule is being developed concurrently -

Appendix C. Linkage Between Annual Performance Goals and Measures and Strategic Plan Goals

-- PLACEHOLDER for Diagram --

Appendix D. Glossary

Agreement State: a State that has signed an agreement with the NRC allowing the State to regulate the use of certain radioactive materials within its borders.

Design-Basis Threat (DBT): a profile of the type, composition, and capabilities of an adversary. The NRC and its licensees use the DBT as a basis for designing safeguards systems to protect against acts of radiological sabotage and to prevent the theft of special nuclear material. The DBT is described in detail in Title 10, Section 73.1(a), of the *Code of Federal Regulations* [10 CFR 73.1(a)].

Defense-in-Depth: an element of the NRC's Safety Philosophy that employs successive compensatory measures to prevent accidents or mitigate damage if a malfunction or accident occurs at a nuclear facility. The defense-in-depth philosophy ensures that safety will not be wholly dependent on any single element of the design, construction, maintenance, or operation of a nuclear facility. The net effect of incorporating defense-in-depth into design, construction, maintenance, and operation is that the facility or system in question tends to be more tolerant of failures and external challenges.

Effectiveness: ability to achieve the intended outcome(s) of an activity, program, or process. A program cannot be considered effective if it is not meeting its objectives and achieving the intended outcome(s).

Efficiency: the ability to act effectively with a minimum of waste, expense, or unnecessary effort. Efficiency embodies a combination of productivity, cost, timeliness, and quality.

Enterprise Architecture (EA): a strategic information asset base which (a) defines the mission; (b) the information necessary to perform the mission; (c) the technologies necessary to perform the mission; and (d) the transitional processes for implementing new technologies in response to changing mission needs. In addition, EA includes (a) a baseline architecture, (b) a target architecture, and (c) a sequencing plan. EA is used to inform and guide IT planning and investment decisions.

Force-on-Force Exercise: an element of the NRC's Safety Philosophy that employs successive compensatory measures to prevent accidents or mitigate damage if a malfunction or accident occurs at a nuclear facility.

High-Level Waste (HLW): also called "spent fuel," HLW encompasses the highly radioactive materials that are produced as byproducts of the reactions that occur inside nuclear reactors. Such wastes take one of two forms, becoming either (1) spent (used) reactor fuel when it is accepted for disposal, or (2) waste materials that remain after spent fuel is reprocessed.

Low-Level Waste: items that have become contaminated with radioactive material or have become radioactive through exposure to neutron radiation. This waste typically consists of contaminated protective shoe covers and clothing, wiping rags, mops, filters, reactor water treatment residues, equipment and tools, luminous dials, medical swabs, injection needles, and

syringes. The radioactivity can range from just above background levels found in nature to very high levels found in certain cases (such as parts from inside the reactor vessel in a nuclear power plant).

Outcome Goals: long-term performance goals; the intended outcomes of specific strategies.

Performance Assessment Rating Tool (PART): An instrument used by the Office of Management and Budget to inform budgeting decisions, support management, identify design problems, and promote performance measurement and accountability.

Performance-Based: an approach that establishes performance and results as the primary basis for decisionmaking. Performance-based regulation presumes that (1) measurable (or calculable) parameters exist to monitor performance, (2) objective criteria have been established to assess performance, (3) licensees have flexibility to determine how to meet the established performance criteria in ways that will encourage and reward improved outcomes, and (4) a framework exists in which the failure to meet a performance criterion, while undesirable, will not in and of itself constitute or result in an immediate safety concern.

Public: the community at large.

Risk-Informed: An approach to decision-making in which risk insights are considered with other factors such as engineering judgement, safety limits, redundancy, and diversity. Risk insights are gathered from asking three questions: "What can go wrong?;" "How likely is it?;" and "What are the consequences?" A risk assessment is a systematic method for addressing these three questions as they relate to understanding likely outcomes, sensitivities, areas of importance, system interactions, and areas of uncertainty.

Spent Fuel: see *High-Level Waste*.

Standard: technical requirements and recommended practices for performance of any device, apparatus, system, or phenomenon associated with a specific field.

Stakeholders: a subsection of the general public that comprises a targeted population that has a specific interest in a given topic. (Should the NRC decide to measure public confidence at some point in the future, it may be worthwhile to target specific stakeholder groups, such as residents living near facilities, non-government groups, media, local officials, etc.)

Uprates: the process of increasing the maximum power level at which a commercial nuclear plant may operate.

Yucca Mountain Repository: a proposed underground facility at Yucca Mountain, Nevada, for the permanent disposal of high-level waste produced from nuclear power plants and the Nation's nuclear weapons production activities.

(2)

Construction Inspection Program

Mary Ann M. Ashley
CIP Team Leader

Staff

Development Team

- Antone Cerne, RI
- Jerome Blake, RII
- Caudle Julian, RII
- Ron Gardner, RIII
- Charles Paulk, RIV
- Tom Foley, NRR
- Joseph Sebrosky, NRR
- Edmund Kleeh, NRR
- Carl Konzman, NRR

Steering Committee

- Charles Casto
- Stuart Richards
- James Lyons

Development of the CIP

- Uses a team approach
  - Regional representatives
  - Steering committee
- Builds on work from 1996
  - Lessons learned

Program Overview

- Framework Document
- Inspection Manual Chapters
- Inspection Procedures

CIP Framework Document

Reflects that inspection program is focused on reaching conclusions

- IMC-2501 for Early Site Permits
- IMC-2502 Combined License
- IMC-2503 ITAAC
- IMC-2504 Preparation for Operation

Challenge: IMC-2503, ITAAC

- Majority of the inspection work
- Modular Construction Techniques
  - Aggressive construction schedules
  - Location of construction activities
  - Timing of inspections to support ITAAC conclusion

People

Inspection skills

- Strategic Workforce Planning
- On-going construction
  - MOX fuel fabrication facility
  - Enrichment facility construction
  - Browns Ferry Unit 1 restart
- Formal training

Programs and Processes

Construction Inspection Program Information Management System (CIPMS)

- Collect, organize, manage and generate reports
- Tie information to NRC ITAAC verifications
  - Detailed construction schedules as early in the process as possible regardless of location
  - Coding scheme

Procedures

Detailed Inspection Procedures

- Design-specific inspection procedures
- Estimate in SECY-01-188, "Future Licensing and Inspection Readiness Assessment (FLIRA)"
- Lead time for development varies by design

Public Comments

- Applicability of Part 21 to applicants
- More specifics:
  - public communications
  - engineering design verification
- Clarify expectations regarding Appendix B
- Clarify role of SAYGO

What's next for CIP?

- Finalize the framework document
- Test CIPIMS
- Observe construction in progress (particularly modular construction)
- Complete Manual Chapters
- Complete change summaries for Inspection Procedures

(3)

United States Nuclear Regulatory Commission

Standard Review Plan (SRP) Chapter 18, Human Factors Engineering and Associated Documents

ACRS
December 4, 2003

1

Agenda

- Introduction
- Overview of SRP and related documents
- NUREG - 1764
  - Risk-informed screening method
  - Human factors engineering review criteria
- ACRS Letter of Sept. 24, 2002
- Public comments and ACRS letter of Nov. 13, 1995
- Closing statements
- ACRS discussion

2

Meeting Purpose

- **Request ACRS Endorsement of:**
  - **Revision to SRP Chapter 18, "Human Factors Engineering"**
  - **NUREG-0711, "Human Factors Engineering Program Review Model;"**
  - **NUREG-0700, "Human System-Interface Design Review Guidelines;"**
  - **NUREG-1764, "Guidance for the Review of Changes to Human Actions."**

3

Presenters

- J. Persensky, RES/DSARE/REAHFB
- James Bongarra, NRR/DIPM/IROB
- Susan Cooper, RES/DRAA/PRAB
- Paul Lewis, RES/DSARE/REAHFB

4

SRP Chapter 18 and Related NUREGs Overview

- SRP Chapter 18 provides a high level framework for all HFE reviews

Applications:

Review aspects of →

- o New Plants
- o Control room modifications
- o Modifications affecting human actions

5

SRP Chapter 18 Revisions

- Modified review elements and acceptance criteria to agree with NURE-0711, Rev.2
- Added review of plant modifications and credited human actions
- Added a graded approach to HF review based on risk insights

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SRP Chapter 18
Technical Basis for Revision

- Address feedback from applications
  - ALWR reviews
  - Plant modernization reviews performed in other countries
  - Feedback from staff and international users
- Incorporate NRC research on human factors engineering

7

SRP Chapter 18
Summary

- SRP Chapter 18:
  - Existence Since Early 1980's
  - Last Revised – 1996
  - Principal NRC HF Guidance
  - Refers to Several HF Related Guidance Documents
  - Latest Revision Upgraded, Partially Risk-informed

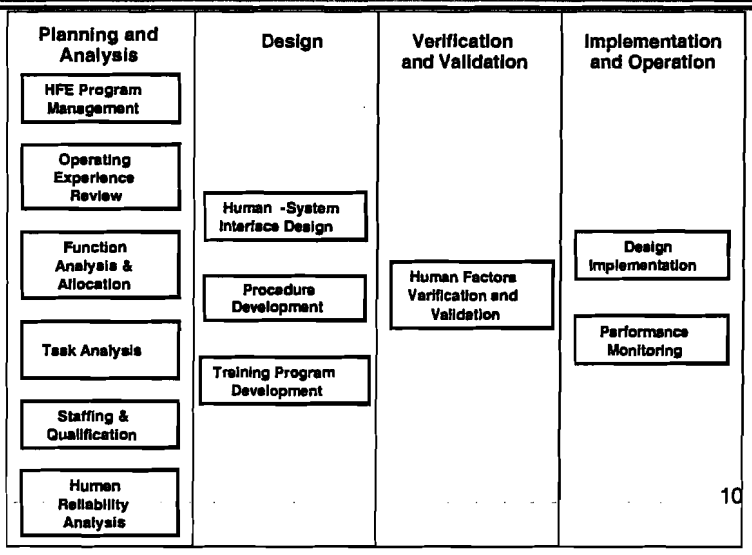
8

NUREG-0711
"Human Factors Engineering Program Review Model"

- Complete set of HF review elements.
  - All HF reviews.
  - Complete life cycle.
  - Includes reviews of the design process and the design product.
- Elements from NUREG-0711 are adapted in other documents for specific types of review.

9

NUREG-0711
Review Elements



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NUREG-0711
Changes From Prior Revision

- Applies to all HF reviews, not only advanced reactors.
- Two elements added :
  - Design Implementation.
  - Performance Monitoring.
- Changes made to the following elements
  - Function Analysis and Allocation.
  - Human Reliability Analysis.
  - Human-System Interface.
  - Verification and Validation.

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NUREG-0700
"Human System-Interface Design Review Guidelines"

- HSI Elements
  - Information Display
  - Interaction and Interface Management
  - Basic Controls
- HSI Systems
  - Alarm Systems
  - Group-View Display System
  - Soft-Control System
  - Computer-Based Procedure Systems
  - Computerized Operator Support Systems
  - Communication Systems
- Workstations and Workplaces
- HSI Support
  - Maintainability of Digital Systems

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NUREG-0700
Changes From Prior Revision

- Adds review guidance for digital systems
  - General computer-based information system interfaces
  - Soft controls
  - Computer-based procedures and alarm systems
  - Interface management and navigation
  - Maintainability of digital systems

13

NUREG-1764
"Guidance for the Review of Changes to Human Actions"

- Guidance addresses:
  - New actions (e.g., substitution of a human action for an automated action, when the automated equipment fails.)
  - Modified actions (e.g., due to new or modified system components.)
  - Modified task demands (e.g., change in amount of time available, or in environment.)
- Risk-informed review guidance
  - The risk screening method determines the level (detailed, medium, brief) of human factors review.

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NUREG-1764
Review Approach

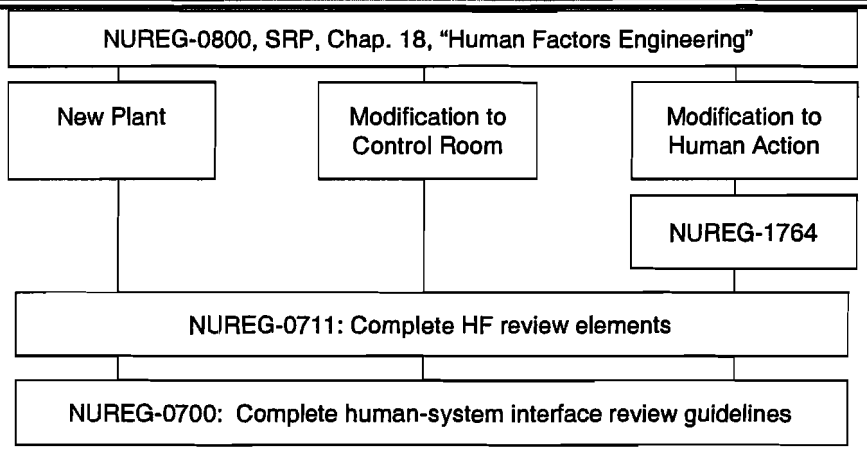
+ Risk-screening
  - Risk-informed submittal
  - Non-risk informed submittal

+ Human factors review criteria

+ Integrated Decision-Making (See RG1.174, Section 2.2.6) and Input to Safety Evaluation Report

15

SRP, Chapter 18, "Human Factors Engineering" Hierarchy



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NUREG-1764
Phase 1
Risk Screening Method

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NUREG-1764, Risk Screening Method
Four Steps

- Step 1: Change in risk due to modification per RG 1.174.
- Step 2: Evaluation of risk-significance of human action not being performed correctly.
- Step 3: Qualitative evaluation.
- Step 4: Integrated assessment.

18

NUREG-1764, Risk Screening Method Step 1

- Step 1 - change in risk due to modification per RG 1.174
- Δ CDF_{mod} = [new CDF (with modification in-place) - current baseline CDF]

19

NUREG-1764, Risk Screening, Step 1 (cont.)

- If HA only and Region I – Do a Level I HFE review.
- Otherwise - go to Step 2 to evaluate risk-significance of human-action not being performed correctly

20

NUREG-1764, Risk Screening Step 2

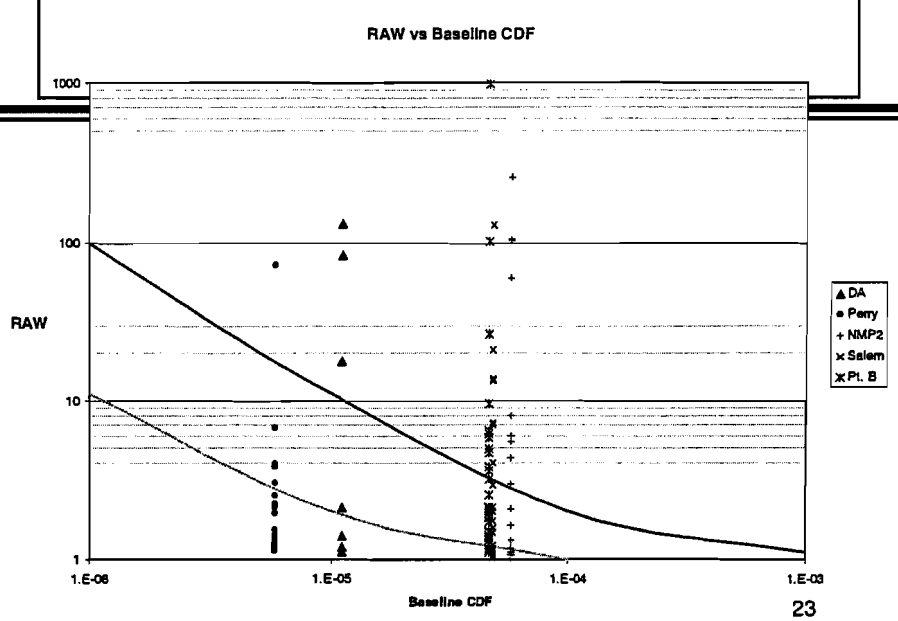
- Step 2 - evaluation of risk-significance of human action not being performed correctly
- Evaluates risk importance of HA based on both RAW and FV importance measures.
- Preliminary determination of Review level for HA as Level I, II, or III.

21

NUREG-1764, Risk Screening, Step 2 RAW versus CDF_{BL}

- RAW measures importance by computing the increase in CDF when the HA fails
- We select the ratio method of RAW since it is most commonly used and understood and PSA programs already calculate it
- $RAW_x = (CDF_{BL} + \Delta CDF_x) / CDF_{BL}$

22



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NUREG-1764, Risk Screening, Step 2
RAW versus CDF_{BL}

- Level I versus Level II split line:
  - **The line is based on a combination of CDF_{BL} and Δ CDF of 1 E-4**
  - **Related to the Commission Safety Goal of not exceeding a CDF of 1E-4 core damage events per reactor-year**
  - **Relates to a red finding in the new NRC SDP program**

24

NUREG-1764, Risk Screening, Step 2
RAW versus CDF_{BL}

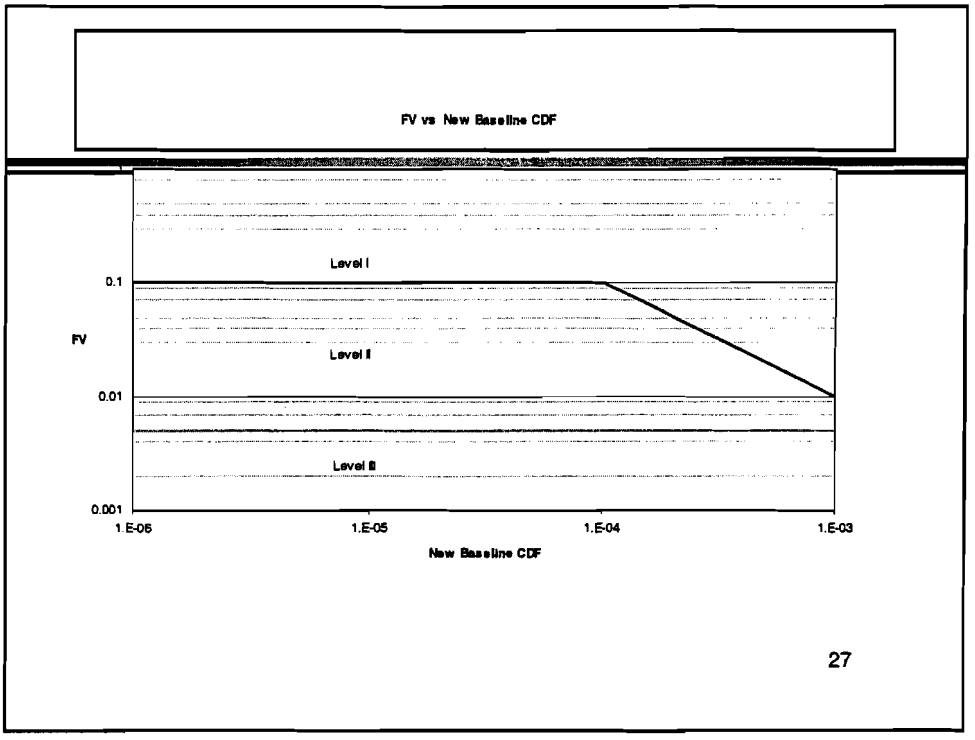
- **Level II versus Level III split line**
  - **Similar to RG 1.174, this is placed is one order of magnitude below the Level I line**
  - **Equates the lower Level II curve to a ΔCDF of 1 E-5**
  - **Thus Level II relates to a Yellow SDP finding and Level III to a White or Green finding**

25

NUREG-1764, Risk Screening, Step 2
FV versus CDF_{BL}

- FV represents a different aspect of risk than RAW
- FV is the fraction of total core damage cutsets (or sequences) that contain the action in question
- FV Split Criteria on next VG.

26



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NUREG-1764, Risk Screening, Step 2
Combining RAW and FV

- Take the most conservative Region as determined by RAW and FV

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NUREG-1764, Risk Screening Step 3

- Step 3 - Qualitative Evaluation
  - Allows the screener to reduce or elevate the Level of HFE Review
  - Based on factors such as:
    - Personnel functions and tasks.
    - Design support for task performance.
    - Performance shaping factors.

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NUREG-1764, Risk Screening Step 4

- Step 4 Integrated Assessment
  - Integrates the results generated in Steps 1 through 3
  - Provides a Table that gives the Level of HFE review based on screening.
  - Conclusion of Risk Screening: The level (I, II, or III) of human factors review.

30

NUREG-1764, TABLE 2.2 (p. 22), "Integrated Assessment with RI Screening"

Results of Step 1 RG 1.174 (see Note 1)	Results of Step 2 Importance Measures	Results of Step 3 Qualitative Assessment	Results of Step 4 Recommended Level of HF Review
Region I (HA only)	-	-	Level I
Region I (Equipment & HA)	Level I	No change or elevate	Level I
		Reduce	Level II
	Level II	Elevate	Level I
		No change	Level II
		Reduce	Level III
	Level III	Elevate	Level II (see Note 2)
		No change or Reduce	Level III
Region II	Level I	No change or Elevate	Level I
		Reduce	Level II
	Level II	Elevate	Level I
		No change	Level II
		Reduce	Level III
	Level III	Elevate	Level II
		No change or Reduce	Level III
Region III	Level I	No change or Elevate	Level I (see Note 3)
		Reduce	Level II
	Level II	Elevate	Level I (see Note 3)
		No change	Level II
		Reduce	Level III
	Level III	Elevate	Level II
		No change Or Reduce	Level III

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NUREG-1764, HF Review
Three Levels of HF Review

- Levels
  - Level I is the most detailed review
  - Level II is a moderately detailed review
  - Level III is a brief review
- Criteria are from NUREG-0711
  - Graded
  - Tailored

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NUREG-1764, Phase 3 HF Review Decision

- Result of human factors review is submitted to Integrated Decision-Making (See RG1.174, Section 2.2.6) and to Safety Evaluation Report

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ACRS Letter of Sept. 24, 2002 Remarks

- **Generate guidance for the use of inspection and review tools**
- **Study team and individual performance in the context of plant organization***
- **Consider need for simulator devoted to research***
- **Study human performance during severe accidents**
- **Evaluate if the ROP detects human performance degradation**
- **Search for leading indicators of human performance degradation***
- **Investigate latent errors and how to treat in PRA***
- **Articulate HRA program vision***
- **Use of simulators for quantifying HRA**
- **Perform critical review of HRA models.**

34

Comments on NUREGs -0800, Chapter 18, -0711, and -0700

35

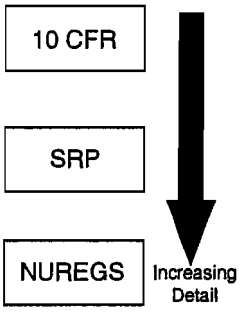
Comment by Robert Fuld (1): NUREG-0711 is overly prescriptive.

- **Response**
  - **NUREG-0711 does not prescribe a *process*; it provides *guidelines* for the *review* of design process.**
  - **The review elements are used to review how important topics are addressed in the applicant's process.**
  - **To illustrate**
    - **NUREG-0711 provides guidance on the review of task analysis, but does not specify that one task analysis method must be used.**
    - **Three advanced reactor reviews were conducted using NUREG-0711, yet *each* vendor had *its own design approach*, and *each design is very different.***
  - **NUREG-0711 is detailed, but the detail is needed**
    - **Increase the standardization across reviews**
    - **Reduce uncertainty in its application**

36

Comment by Robert Fuld (2): NUREG-0711 may be considered de facto regulation

- **Response**
  - **This is an agency-wide issue**
  - **HFE review information is provided in increasing detail to provide flexibility in application**
  - **The HFE review guidance documents clearly state that the contents are guidance and that alternative approaches can be acceptable with justification**
  - **NUREG-0711 explicitly provides guidance on how to evaluate the acceptability of alternative approaches**



37

Critiques by Robert Fuld (3): The use of a systems engineering approach is not justified.

- **Response**
  - **What NUREG-0711 means by "systems engineering approach" is:**
    - **To consider the 12 elements,**
    - **To decide which of the 12 elements applies to this review,**
    - **To use those elements in the review.**
  - **This approach is quite general.**
  - **This approach is widely used and accepted**
    - **Systems engineering is a fundamental approach to human factors taught in most human factors courses**
    - **It is used by nearly all design organizations of large, complex systems**
  - ***The critique does not suggest an alternative approach***

38

Comment by Robert Fuld (4): NUREG-0711 is too costly.

- **Response**
  - **The basis for this comments is unknown**
    - **Compared with what alternative?**
  - **Industry currently recognizes the need for HFE and addresses it; NUREG-0711 is used to review what processes are used**
  - **NRC guidance is forward looking and has smoothed the road for the introduction of new technologies for advanced control room technologies by providing clear guidance**
  - **All NUREG-0711 elements are not used for all reviews.**
    - **A graded and tailored approach is used based on the type of review being performed.**

39

Comment by ACRS (1995): NUREG-0700 Overly prescriptive and may discourage the approval of other equally acceptable alternatives (de facto regulation).

- **Response**
  - **NUREG-0700 is used with the NUREG-0711 process**
    - NUREG-0711 encourages the use of a vendor/licensee specific style guide in place of 0700
  - **Guidelines reflect best practices**
    - HED evaluation process uses guideline discrepancies only as flags for looking in more detail
    - It is recognized that I&C and HFE technology are rapidly changing (more so than other aspects of the plant) and the need to address new technology is built into 0711
  - **The items are used to evaluated what technology is employed by the vendor**
    - The document does not suggest that the guidance areas included are expected to be included in the design, e.g., guidance for the review of computerized procedures is provided and used only IF such a system is provided

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Summary of Positive Feedback

- NEI Public Comment Letter
  - "It should be noted that there are few comments, indicating the draft sections provide adequate information to successfully develop and implement the targeted programs and plans."
- ACRS Letter of January 14, 1994
  - "We commend the staff for the development of this document (HFE Program Review Model). It provides much needed guidance to applicants on the staff expectations with regard to HFE for evolutionary reactors."
- Results of extensive peer review by industry groups and its use by many organizations both within and outside of the nuclear industry reflect the positive light in which this guidance is viewed.

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SRP Chapter 18 and Related NUREGs Summary

- SRP Chapter 18 now has three applications
- NUREG-0711
  - Scope of application expanded
  - New and revised review guidance
- NUREG-0700 added guidance for specific HSI topics
  - Computer-based procedures
  - Soft controls
- NUREG-1764
  - New document.
  - It contains (1) a risk screening method and (2) graded HF review criteria.

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SRP Chapter 18 and Related NUREGs Conclusion

- **Supports NRC Performance Goals**
  - **Reduce unnecessary burden**
    - NUREG-1764 has a risk screening method
    - No new requirements
  - **Improve regulatory efficiency**
    - Clear, detailed review guidance
    - Standardized format
    - Users have expressed need for detail
  - **Maintain safety**
    - Risk screen provides detailed review for risk important human actions.
    - Reduces regulatory uncertainty, which can cause licensees to delay safety improvements
    - Contains review guidance for new technologies
- **Supports NRC policy on risk-informed regulation**
- **Asking for ACRS letter**

43

Technical Reports Related to the Development of Human Factors Engineering Review Guidelines

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NFPA 805 RULEMAKING

ACRS Full Committee
Briefing On Fire Protection
December 4, 2003

Paul Lain, Plant Systems, NRR
Joe Birmingham, Rulemaking, NRR

NFPA 805 - Performance-Based Standard for Fire Protection for LWRs

- Background
- Advantages
- NFPA 805 Structure
- Implementation
- Rule Structure
- Status of Rulemaking
- Schedule

NFPA 805 - Background

- 1975 - Browns Ferry Fire
- 1980 - 50.48 and Appendix R
- 1998 - Reg. Guide 1.174, PRA
- 1998 - SECY 98-058, RI/PB FP Std
- 2000 - SECY 00-009, Rulemaking Plan
- 2001 - NFPA 805 Published
- 2002 - Proposed Rule Published

NFPA 805 - Advantages

- Uses stakeholder involvement
- Voluntary alternative
- Sets performance goals and criteria
- Focus on risk significant issues
- Endorses a National Consensus Standard
- Reduces unnecessary regulatory burden

NFPA 805 Structure

- Maintains a core FP program
- Requires an analysis to establish a fundamental fire protection program
- Allows transition of existing licensing basis including exemptions and GL 86-10 evaluations
- Guidance on performing nuclear safety analysis, fire modeling, and fire PSAs

NFPA 805 Structure (Continued)

- NFPA 805 Chapter 3 "Fundamental Fire Protection Elements"
  - Fire Protection Plan
  - Fire Prevention (e.g. control of combustibles)
  - Fire Brigade
  - Water Supply
  - Standpipes and Hose Stations
  - Fire Extinguishers
  - Fire Alarm and Detection Systems
  - Water-Based Fire Suppression Systems
  - Gaseous Fire Suppression Systems
  - Passive Fire Suppression (e.g. building separation, fire barriers, penetrations)

NFPA 805 Structure

- Differences From App. R
  - Cold shutdown
  - Emergency lighting
  - Alternate/dedicated shutdown
  - Analyzed shutdown method
  - Recovery actions
  - Adds radiation release criteria

Implementation

- NEI pilots held at Farley and McGuire
- NEI Implementation Guide
- Comprehensive review of initial submittals
- Enforcement discretion during transition
- ROP monitors future changes

Rule Structure

- Incorporates NFPA 805, 2001 Edition into 10 CFR 50.48(c)
- Identifies 7 exceptions to the standard
- Requires license amendment to adopt NFPA 805 including identifying any license revisions
- Requires licensee to complete a plant wide evaluation before changing fire protection program

Rule Structure

- Licensees document evaluation and retain records on site
- Alternatives to NFPA 805 and changes to Chapter 3 elements require license amendment
- NRC approval of methods not required licensee may use these at "risk"
- Decommissioning plants may comply with NFPA 805
- ROP monitors future changes
- NRC may approve new RI/PB methods in the future

Current Status

- Proposed rule issued November 2002
- Comment period ended January 2003,
- Federal Register Notice reviewed by OGC, November 2003
- Rev E of implementing guidance expected first Quarter of 2004

Schedule

- Dec – Brief ACRS on Final Rule
- Jan/Feb – Office Concurrences/CRGR
- Mar - Final Rule to EDO/Commission
- Final Rule published 1 month after Staff Requirements Memorandum

(5)

OPERATING EVENTS
July 4 - November 11, 2003

This review of significant or interesting operating events at nuclear power plants covers the period from July 4, 2003 to November 11, 2003.

This period was characterized by an unusually large number of reactor scrams caused by problems beyond the main generator breaker. I have called these "Switchyard" scrams for lack of a better term, but they are problems in the electrical system beyond the main generator breaker. During the period there were 23 such scrams. These were discussed during our October meeting and are not repeated here. Those scrams were associated with the blackout of August 14, 2003, Hurricane Isabelle on September 16 - 18, 2003 other weather events other grid stability events, or switchyard or transmission problems.

Since our discussion in October there have been 4 additional transients (3 scrams and 1 forced reduction in power) which might be classified as switchyard related and these are listed here. This trend seems to be continuing. Once the 23 previously discussed scrams are taken out of the data set, there have been 17 automatic scrams and 9 manual scrams in this period. Of those 8 automatic scrams and 2 manual scrams were feedwater related. This includes Feedwater Pumps, Valves, and control problems. This is a new potential trend and it will be watched carefully in the future.

Not included in the listing a many partial or complete loss of Sirens, ENs, and power to emergency facilities. These are too numerous to list. Most are associated with the blackout of August 14, 2003, severe weather events, or traffic accidents.

For simplicity the list of events has been categorized as follows: Fires, Automatic Scrams, Manual Scrams, Shutdown of Interest, Security and Safety, RCS Boundary Leakage, and Miscellaneous Interesting Issues. Again the 23 switchyard associated scrams which occurred during this period and discussed previously are not listed here.

G.M. Leitch
November 11, 2003

OPERATING EVENTS
JULY 4, 2003 - NOVEMBER 11, 2003

Fires

Susquehanna 1*	9/11/03	Fire in 1B RFP. Power reduced, RFP removed from service, fire out in 8 minutes.
Cooper 1	10/16/03	Unusual Event - Fire in Turbine Bearing. Small fire in oil soaked insulation. Reflashed several times. Load reduced from 100% to 65%.
Cooper 1**	10/28/03	Manual Scram from 75% due to fire in wood tower supporting transmission line from main power transformer to 345 Kv switchyard. Offsite fire department responded. Offsite power not affected. One EDG was ODS for preplanned maintenance.

Automatic Scrams

Comanche Peak 2	07/09/03	Auto Scram from 100% RCP Breaker tripped
Point Beach 2*	7/10/03	Auto Scram from 100% due to main feedwater pump trip due to electrical fault
Point Beach	7/15/03	Auto Scram from 100% - loss of rod drive MG Set. Failed to transfer to alternate supply
Harris 1*	8/17/03	Auto Trip from 100% due to trip of a Condensate Pump and subsequent trip of AFW Pump - Likely weather related
Oyster Creek	8/22/03	Auto Scram from 100% due to turbine trip on high moisture separator level
Watts Bar 1**	8/25/03	Auto Scram from 100% - Actuation of sudden pressure relay on main transformer
Catawba 1	8/29/03	Auto Scram from 100% due to RPS actuation. Hot leg temperature instrument problem while other channel was tripped
River Bend 1	9/23/03	Auto Scram from 78% during turbine valve testing.
Susquehanna 1*	9/24/03	Auto Scram from 100% on low reactor water level. FW Pump testing was in progress and 1 of 3 tripped.

OPERATING EVENTS
JULY 4, 2003 - NOVEMBER 11, 2003

Wolf Creek 1*	8/18/03	Auto Scram from 100% - Low SG level due to unexplained closure of BFW isolation valve.
Dresden 2*	9/30/03	Auto Scram from 85% on Low Reactor level due to FW Pump Trip
Davis Besse 1	9/30/03	Auto Trip on High Pressure, Zero power. Group I rods inserted.
Beaver Valley 2*	10/15/03	Auto Trip from 39% due to SG level low. FW Regulating Valves not responding properly.
Seabrook 1*	10/31/03	Auto Trip from 100% due to low SG level caused by trip of one of two feedpumps
Brunswick 2**	11/4/03	Auto Scram from full power (95%) Generator Trip due to loss of excitation
Crystal River 3*	11/05/03	Auto Scram from 35% due to high RCS pressure. High pressure caused by feedwater transient which underfed the steam generator resulting in the high pressure
Nine Mile Point 2	7/24/03	Auto Scram from 100% due to power supply failure in Main Steam line flow instruments. Reactor scrammed on Stability Protection. No instability was observed. Fifty percent power when Scram actually occurred.

Manual Scrams

Point Beach 2*	7/11/03	At zero power, main FW Valves opened causing reactor cooldown and pressurizer low level. Manual trip and manual safety injection initiated. No injection actually occurred.
Palo Verde 2	7/29/03	Manual trip from 100% after stuck open pressurizer spray valve failed to close. Valve was being returned to service following maintenance
Sequoyah 1	8/28/03	Turbine Tripped during oil test. REACTOR FAILED TO SCRAM. Manually Scrammed. Alert declared. (See attached reports)

OPERATING EVENTS
JULY 4, 2003 - NOVEMBER 11, 2003

Ft. Calhoun 1	9/13/03	While shutting down for refuel, manually tripped from 16% power due to unanticipated Negative Axial Shape Index. Power shifted toward top of core
Hope Creek 1	10/4/03	Manual Scram - Zero power - EHC Oil Leak
Ginna 1**	10/15/03	Manual Trip from 1% power due to partial loss of offsite power. Weather related.
Salem 1*	10/15/03	Manual Trip due to bound up FW Regulating Valve
Duane Arnold 1	11/2/03	Manual Scram due to high conductivity - Suspect condenser tube leak
Duane Arnold 1	11/7/03	Manual Scram from 45% due to high conductivity. Turbine did not trip as expected. Manually tripped and prevented motoring.

Shutdowns

Vermont Yankee	9/27/03	Tech Spec required shutdown due to RCS leakage increase to greater than 2 gpm
Calloway 1	10/21/03	Tech Spec required shutdown due to inverter failure which supplies instrument power. Instrument bus is now supplied from alternate source, but this does not meet TS requirements.

RCS Boundary Issues

Vogle 2	9/5/03	Investigating problems with RPV penetrations (PNO-11-03-17)
Oconee 1	9/23/03	Exam of old head (being replaced) 2 CRDM and 1 thermocouple penetration evidence of thru wall leakage. Thermocouple had been repaired in December 2000.
Arkansas 2	10/2/03	Zero power - Small crack in drain line welded cap
Crystal River 3	10/4/03	While at hot shutdown, inspection revealed 2 RCS pressure boundary leaks in pressurizer penetration sensing lines

OPERATING EVENTS
JULY 4, 2003 - NOVEMBER 11, 2003

Seabrook 1	10/7/03	Boron deposits on head from leaking conceal weld. Hot reactor coolant boundary
Pilgrim 1	10/4/03	Crack in CRD Return line nozzle cap. Discovered while off line
Palo Verde 2	10/14/03	Circumferential indications in six pressurizer heater sleeves while S/D for refuel. No indication of boric acid. Examination continues.
Summer 1	10/20/03	RCS thru wall leakage on seal injection piping to RCP. Found during refueling inspection
Waterford 3	10/25/03	While S/D for refuel, inspection revealed evidence of a leak at nozzle on RCS hot leg for pressure sensor. Small amount of boric acid was noted.
Waterford 3	10/25/03	While S/D for refuel, inspection of pressurizer bottom nozzles revealed white substance on two heater sleeve nozzles. Analysis continues.
TMI 1	11/4/03	During refueling outage found pressurizer heater bundle diaphragm plate degraded resulting in RCS leak detected by boron

Misc Interesting Things

Trojan 1	9/3/03	All spent fuel now in ISFSI
Byron 1 & 2 Braidwood 1 &2	8/29/03	May have exceeded 100% power by approx. 1%. Problems with Feedwater Measuring Device reported by manufacturer.
Ft. Calhoun 1	9/23/03	Unusual Event. In refueling outage spent fuel bundle became ungrappled and dropped 3 feet. No damage. No radiation release
General Electric	10/2/03	G. E. notifies BWRs of potential non-conservative analysis regarding instability of OPRM channels.
Seabrook 1	9/15/03	Boral test coupon which was removed for inspection showed unexpected amount of blistering. Until better understood Seabrook will add blistering allowance to SFP Criticality curves. May have generic implications

OPERATING EVENTS
JULY 4, 2003 - NOVEMBER 11, 2003

Quad Cities 1	11/05/03	Power reduced due to indications of moisture carry-over. Suspect steam dryer problems similar to Unit 2.
Byron	10/2/03	Fuel Assembly being moved struck wall in fuel transfer area. No damage; no release of radiation. Special NRC Inspection
Ginna 1	10/7/03	Special Inspection - to investigate by pass path around containment sump Screens. Would allow debris to by-pass Screens.
Millstone 1	7/23/03	Dropped control rod blade in SFP. Fell 14 feet - no damage reported.
General Electric	9/24/031	Update of information regarding impact of fuel channel bowing on CRD blades. Several BWRs notified they may be affected.

Security/Safety

Monsanto	7/10/03	NOT POWER REACTOR - Employee received 39 REM WB - Damaged Source stored in desk
Sequoyah	7/2/03	Lost security weapon. Reported found on August 4, 2003

NOTES

* Of the 17 automatic scrams during the period, 8 were the result of interruption of feedwater supply

Of the 9 manual scrams, two were caused by interruption of the feedwater supply. Also, 1 of the three fires was feedwater related.

** In addition to the 23 scrams we discussed at our October meeting, these transients also appear to be switchyard related. The other 23 scrams are not listed here since they were discussed in October but they include those associated with the blackout of August 14, 2003, Hurricane Isabelle, and other electrical problems beyond the generator breaker.

5 pm

Voted Re-elected

Unan = Banaca

Unan = Wallis

Rosen

12/5/03
11 23 am

G:PPHandout

ACRS MEETING HANDOUT

Meeting No.	Agenda Item	Handout No.:
508	12	12.1

Title **PLANNING & PROCEDURES/ FUTURE ACRS ACTIVITIES**

Authors
JOHN T. LARKINS

List of Documents Attached

PLANNING & PROCEDURES MINUTES

12

Instructions to Preparer	From Staff Person
1. Paginate Attachments 2. Punch holes 3. Place Copy in file box	JOHN T. LARKINS

INTERNAL USE ONLY
12/02/03

G:PlanPro(ACRS):pp.mins.508
Dec. 3, 2003

SUMMARY MINUTES OF THE
ACRS PLANNING AND PROCEDURES SUBCOMMITTEE MEETING
DECEMBER 3, 2003

The ACRS Subcommittee on Planning and Procedures held a meeting on December 3, 2003, in Room T2B1, Two White Flint North Building, Rockville, Maryland. The purpose of the meeting was to discuss mattes related to the conduct of ACRS business. The meeting was convened at 11:45 a.m. and adjourned at 12:50 p.m.

ATTENDEES
M. Bonaca
G. Wallis
S. Rosen

ACRS Staff

J. T. Larkins
S. Bahadur
H. Larson
R. P. Savio
S. Duraiswamy
S. Meador
J. Gallo
M. Weston
M. El-Zeftawy
H. Nourbakhsh
M. Sykes
M. Snodderly
B.P. Jain
R. Caruso

1) Review of the Member Assignments and Priorities for ACRS Reports and Letters for the December ACRS meeting

Member assignments and priorities for ACRS reports and letters for the December ACRS meeting were discussed (pp. 8-10). Reports and letters that would benefit from additional consideration at a future ACRS meeting were also discussed.

RECOMMENDATION

The Subcommittee recommends that the assignments and priorities for the December ACRS meeting be as shown in the attachment (pp. 8-10).

2) Anticipated Workload for ACRS Members

The Subcommittee discussed anticipated workload for ACRS members through March 2004 (pp. 8-10). The objectives are to:

- Review the reasons for the scheduling of each activity and the expected work product and to make changes, as appropriate
- Manage the members' workload for these meetings
- Plan and schedule items for ACRS discussion of topical and emerging issues

During this session, the Subcommittee also discussed and developed recommendations on items included in Section IV of the Future Activities List (pp. 11, 11a).

RECOMMENDATION

The Subcommittee recommends that the members provide comments on the anticipated workload. Changes will be made, as appropriate. The Committee should decide on the Subcommittee's recommendations on items in Section IV of the Future Activities List.

3) Staff Requirements Memorandum Resulting from the ACRS Meeting with the NRC Commissioners

The ACRS met with the NRC Commissioners on Thursday, October 2, 2003, to discuss various items of mutual interest. A Staff Requirements Memorandum (SRM) dated October 31, 2003, resulting from this meeting is attached (pp. 12-13). In that SRM, the Commission states the following:

A. The ACRS should identify, as part of its normal review of advanced reactor designs, those features, approaches, and common phenomenology that could be applied to operating reactors to enhance safety, resolve issues or streamline future activities.

B. In the security arena, the ACRS should continue to focus its attention and expertise on technical issues associated with the progression and potential consequences of postulated terrorist actions, and the assessment of the effectiveness of mitigation strategies. The ACRS should not involve itself in issues associated with threat assessment (i.e., assessments of the likelihood of various types of events), physical security, or force-on-force assessments since these are outside the Committee's area of expertise, and involve intelligence information not available to the Committee.

With regard to item A, the Committee issued a report on the lessons learned from its review of the General Electric ABWR and CE System 80+ designs (pp. 14-17). Dr. Kress, the Chairman of the Subcommittee on Future Plant Designs, suggests that the Committee follow the same approach used by the ACRS previously. Accordingly, after completing the design certification review of the AP1000 in 2004, Dr. Kress plans to prepare a lessons learned report and submit to the Committee for consideration.

Regarding item B, a list of near-term ACRS safeguards and security activities and the associated schedules were provided to the Committee during the September 2003 ACRS meeting. Also, during the October 2003 ACRS meetings, Dr. Bonaca discussed plans for the FY 2004 and FY 2005 ACRS activities in the safeguards and security area (pp. 18-19).

The Commission direction in the SRM dated October 31, 2003 is consistent with the ACRS work scope that was established in the Committee's original May 2002 Task Plan. Dr. Bonaca had stated that he would revisit the plans for the FY 2004 and 2005 ACRS safeguards and security activities after the November 12-14 Safeguards and Security Subcommittee meeting at Sandia. Dr. Bonaca will meet as needed with the cognizant NRC staff to identify the topics that will benefit the most from ACRS involvement and discuss the matter with the Planning and Procedures Subcommittee.

RECOMMENDATION

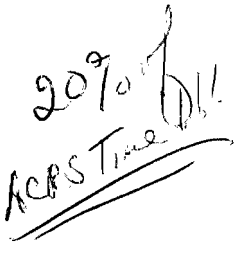
The Subcommittee recommends the following:

- Dr. Kress should prepare a lessons learned report after completing the ACRS review of the AP1000 design and provide it to the Committee for consideration.

- Dr. Bonaca should revise the list of proposed FY 2004 and FY 2005 ACRS safeguards and security activities, as stated above, and discuss any changes with the Planning and Procedures Subcommittee and with the Committee during their February 2004 meetings.

4) ACRS Evaluation of RES Programs

The Office of Nuclear Regulatory Research (RES) has been charged by the EDO to establish a process to evaluate the effectiveness and utility of its programs. This evaluation is mandated by the Government Performance and Results Act and needs to be in place during FY 2004. Mr. Mayfield, RES, discussed this matter with the Committee during the September 2003 ACRS meeting to find out whether ACRS would be interested in undertaking this task. The Committee agreed to assist RES in assessing the effectiveness and utility of the NRC research programs.



Mr. Mayfield provided the ACRS/ACNW Executive Director a draft copy of the "Proposed Approach to ACRS Review of Research Quality," which was discussed by the Committee during its October 2003 meeting. Subsequently, Mr. Mayfield provided an update to the draft, based on conversations with the ACRS/ACNW Executive Director. The Committee was asked to review and provide feedback on this revised draft. The ACRS staff recommended that the rating scale be simplified (3 vs. 5 grades) and the metrics be reduced to remove redundancy. The ACRS staff has prepared a proposed revision to the Plan outlining a strategy for use by the ACRS in reviewing the Quality of the RES Programs (pp. 20-21). It has been provided to Dr. Powers for consideration.

RECOMMENDATION

The Subcommittee recommends that the Committee provide feedback on the draft Plan and the proposed strategy. Mr. Thadani and Mr. Mayfield should be invited to discuss this matter with the Committee during the February 2004 ACRS meeting.

5) Response to SRM on Divergence and International Regulatory Approaches

Following the April 11, 2003, meeting between the ACRS and the Commission, an SRM was issued on April 28 stating that the ACRS should explore and consider other international regulatory approaches and where there are significant differences the Commission should be informed. The ACRS Executive Director tasked LINK Technologies to provide a proposed approach to respond to this SRM. LINK Technologies prepared a preliminary document addressing 18 regulatory topics and the approach taken by several countries to these topics. Subsequently, these topics were grouped into the following categories:

a) Safety Goals (land contamination)
b) Future Reactors (imposition of EPR findings on current reactors)
c) Accident Consequences:
    - ICRP 60 versus ICRP 30
    - Injuries
    - Linear No Threshold (LNT) hypothesis
d) License Renewal (10 year safety appraisal)
e) Risk-Informed Regulation
f) Safety Culture
g) Severe Accident Management Guidelines
h) Quantification of Severe Accidents

After review of the information provided by LINK, the ACRS Executive Director recommended that the Committee focus on selected hot-button issues as opposed to providing a long list of potential topics that may not be of interest to the Commission. It was suggested that the Committee issue a report on the divergence in regulatory approaches in the areas of materials degradation, sump screen blockage, and the use of PRA in risk-informed regulatory decisionmaking in March or April 2004.

During the November 2003 ACRS meeting, Dr. Powers stated that he plans to prepare a proposed ACRS report on this matter and submit it to the Committee for consideration during the February or March 2004 ACRS meeting.

RECOMMENDATION

The Planning and Procedures Subcommittee recommends that Dr. Powers prepare a proposed report on this matter, taking into account the recommendations of the ACRS Executive Director and the revised report prepared by LINK Technologies, as appropriate.

6) ACRS Retreat in 2004

During the November 2003 ACRS meeting, the Committee decided to hold the retreat on January 29-30, 2004, in Room T-2B3, Rockville, Maryland. The Committee also discussed a proposed list of topics for the retreat. As suggested by the Committee, Dr. Bonaca has assigned lead members to each topic (pp. 22). Also, follow-up actions resulting from the 500th ACRS Meeting" have been added to the list of topics.

RECOMMENDATION

The Subcommittee recommends that the members provide feedback on the assignments proposed by Dr. Bonaca. The lead members should inform the ACRS Executive Director whether they need any assistance from the ACRS staff

7) Subcommittee Activities

As a part of the Planning and Procedures Subcommittee's planning activities, each Subcommittee Chairman should provide a listing of proposed/planned Subcommittee meetings for the next several months. To the extent possible, the Subcommittee Chairman should note the subject of the meeting, its objective, and projected outcome. The ACRS Chairman will take a few minutes during each meeting to go around the table and query each member on proposed/planned meetings.

RECOMMENDATION

As agreed to by the Committee during the November ACRS meeting, that cognizant Subcommittee Chairmen should be prepared to provide necessary information on the proposed/planned meetings during the December ACRS meeting.

8) Election of Officers for CY 2004

During the December 2003 ACRS meeting, the Committee will elect Chairman and Vice-Chairman for the ACRS and Member-at-Large for the Planning and Procedures Subcommittee. During the Novernber ACRS meeting the members were notified that in accordance with the ACRS Bylaws, those members who do not wish to be considered for any or all of the offices should notify the ACRS Executive Director in writing by November 21, 2003. Three members have notified the ACRS Executive Director that they do not wish to be considered for all of the offices, one member withdrew his name from consideration for the offices of Chairman and Vice Chairman, and one other member withdrew his name for the office of Chairman.

RECOMMENDATION

The Subcommittee recommends that during the election, the ACRS Executive Director inform the Committee as to which members are available and for which office.

9) Risk-Informing 10 CFR 50.46

The ACRS Subcommittee on Regulatory Policies and Practices held a meeting on November 21, 2003, to discuss the staff's proposed approach for addressing the issues listed in the March 31, 2003 SRM and other related activities. The staff is in the process of developing a Commission paper on this matter, which is expected to be provided to the ACRS for review in the first quarter of 2004. Dr. Shack, Chairman of the Regulatory Policies and Practices, plans to provide a report to the Committee regarding the outcome of the November 21, 2003 Subcommittee meeting during the December ACRS meeting.

RECOMMENDATION

The Subcommittee recommends that Dr. Shack provide a Subcommittee report with regard to risk-informing 10 CFR 50.46 during the December 2003 ACRS meeting.

10) Meeting with the EDO and the NRC Office Directors

The ACRS staff is working with the EDO's Office to set up a meeting with the EDO, Deputy EDOs, and Office Directors in March. We should provide a proposed list of topics for discussion to the EDO in January. Topics proposed by the ACRS Staff are as follows:

- PWR sump performance issues
- Thermal-hydraulic issues
- Proactive materials degradation program
- PRA quality
- Advanced Reactor Design review activities, including major issues and impediments encountered so far.
- Items for ACRS review in the next 2 years
- Effectiveness of ACRS/NRC staff interactions
- ACRS contributions to the regulatory process

RECOMMENDATION

The Subcommittee recommends that the Committee provide feedback on the topics proposed by the ACRS Staff.

11) Member Issues

- Foreign Travel - The agency requires a six-week notice to process requests for foreign travel. For this reason as well as for budget planning purposes, members should advise the Executive Director of any plans for travel outside of the United States immediately.

RECOMMENDATION

The Subcommittee recommends that those members who plan to make foreign travels inform the ACRS Executive Director as soon as possible.

- Travel Request - Dr. Bonaca requests Committee support and approval to attend the PSAM-7/ESREL '04 Conference to be held on June 14-18, 2004, in Berlin, Germany (pp. 23).

RECOMMENDATION

The Subcommittee recommends that the Committee approve the travel request by Dr. Bonaca.

ANTICIPATED WORKLOAD
DECEMBER 3-6, 2003

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Bonaca	Kress	Savio/Major	Safeguards and Security - Pilot Plant Studies/Mitigation Strategies	A	To identify issues of concern to the ACRS	**Draft**
Kress	Rosen	El-Zeftawy	Draft 10 CFR Part 52 Construction Inspection Program	B	To identify issues of concern to the ACRS	**Draft**
Leitch	--	Weston	Recent Operating Events	–	–	–
	Bonaca	Sykes	Subcommittee Report - V.C. Summer License Renewal Application [Subc. Mtg. 12/03]	--	--	--
Powers	--	Duraiswamy/ Nourbakhsh	ACRS report on the NRC Safety Research Program	A	Report Due to the Commission on 3/15/04	**Draft**
Rosen	--	Sykes	Draft Final Revision to 10 CFR 50.48 to endorse NFPA-805 Fire Protection Standard	A	To support the staff schedule	**Draft**
		El-Zeftawy	Proposed Revision to SRP Chapter 18, Human Factors Engineering	A	To support the staff schedule	**Draft**
Shack	--	Snodderly	Subcommittee Report -- Risk-Informing 10 CFR 50.46 (Subc. Mtg. 11/21/03)	–	–	–

ANTICIPATED WORKLOAD
FEBRUARY 5-7, 2004

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Ford	Wallis	Jain	Resolution of Items identified by the ACRS in NUREG-1740 related to the DPO on steam generator tube integrity	A	To provide feedback to the staff	--
Kress	--	El-Zeftawy	Subcommittee Report - ACR-700 Design	--	--	--
Powers	--	Duraiswamy/ Nourbakhsh	ACRS Report on the NRC Safety Research Program	A	Final Draft to be completed in February -----Report due to the Commission 3/15/04	--
Sieber	--	Weston	South Texas Project Cause Investigation of the Reactor Vessel Bottom Mounted Penetration Leakage - **Information Briefing**	--	--	--
Wallis	Kress	Caruso	ESBWR Design-Thermal Hydraulic Issues	A	To identify issues of concern to the ACRS	--

ANTICIPATED WORKLOAD
MARCH 4-6, 2004

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Bonaca	--	Savio/Major	Meeting with the EDO and Office Directors **(Tentative)**	--	--	--
Kress	Wallis	El-Zeftawy	Interim review of the AP1000 design	A	To identify issues of concern to the ACRS	--
Leitch	Bonaca	Jain	Final review of the License Renewal Application for the H.B. Robinson Plant	A	To support the staff schedule	--
Powers	--	Nourbakhsh	Response to SRM on divergence in regulatory approaches between U.S. and other countries	A	To respond to the Commission SRM	--
Shack	Wallis	Snodderly	Risk-informing 10 CFR 50.46- Potential Advance Notice of proposed Rulemaking	A	To support the staff schedule	--

Items Requiring Committee Action

1 **NRC Resident Inspector's Problem Identification and Resolution and the Corrective Action Plan** (Open)

Member: Stephen Rosen **Engineer:** Med El-Zeftawy

Estimated Time: 1 1/2 hours

Purpose: Possible Review & Comment

Priority:

Requested by: NRR C. Carpenter

On July 16, 2003, the ACRS issued its report regarding "Safety Culture" with the conclusion that "The existing regulations provide an appropriate framework for monitoring the impact of licensee safety culture on performance." Currently, the NRC provides several sources relevant to the training of NRC reseident and regional inspectors such as:
- Technical Training course G-200, "reactor Inspection and Oversight Program",
- Lessons Learned Task Force (LLTF) from Davis-Besse recommendations and the Corrective Action Plan (CAP),
- Inspection Procedure (IP) 71152, "Identification and Resolution of Problems".

Link Technologies, Inc. has been tasked to analyze the NRC actions and procedures regarding this matter. The Human Factors Subcommittee plans to hold a meeting in February 2004 to discuss this matter with the NRC staff. If the Committee requests a meeting on this subject, the NRC staff will plan for a briefing during the March 4-6, 2004 ACRS meeting.

The Planning and Procedures Subcommittee recommends that after receiving the report from LINK, Mr. Rosen propose a course of action (need for a Subcommittee meeting, or briefing to the full Committee, and anticipated outcome).

2 **Proposed Rule to Amend the Fitness-For-Duty (FFD) Rule (10 CFR Part 26)** (Open)

Member: Dana Powers **Engineer:** Med El-Zeftawy

Estimated Time: 1 1/2 Hours

Purpose: Possible Review & Comment

Priority:

Requested by: NRR R. Karas

In the wake of September 11, 2001 terrorist attacks and the increased sensitivity to the physical security implications of the Fitness-For-Duty (FFD) requirements, the NRC staff prepared a proposed FFD rule. The objectives of the proposed rule include measures that the licensee FFD programs provide high assurance that individuals subject to this part are trustworthy and reliable as demonstrated by avoiding substance abuse; provide reasonable measures for the early detection of persons who are not fit to perform within the scope of this part; provide measures that the workplaces are free of the presence of illegal drugs and alcohol; enhance consistency with the Department of Health and Human Services Mandatory Guidelines for Federal workers Testing programs; and reduce unnecessary regulatory burden. The NRC staff plans to publish the proposed rule for public comments in early CY 04. The NRC staff anticipates extensive stakeholder comments during the comment period, and recommends that the Committee consider reviewing the proposed rule after the public comments have been analyzed by the staff. If the Committee requests a briefing on the proposed rule prior to public comments analysis, the staff will plan for a briefing during the February 2004 ACRS meeting.

Dr. Powers recommends that the Committee not review this matter.

3 **NRC Bullentin 2003-02, Bottom Head Penetration** (Open)

Member: FPF/JDS **Engineer:** Maggalean Weston

Estimated Time: 1 Hour

Purpose: Information Briefing

Priority:

Requested by: NRR Maggalean Weston

The staff has proposed an Information Briefing on Bullentin 2003-02, Bottom Head Penetration. Currently, 23 of 58 plants have responded to the requirements of the bullentin. There are no unusua or eventful findings. It is proposed that the briefing be delayed until all of the responses are in.

The Planning and Procedures Subcommittee recommends that the Committee consider hearing a briefing on this matter after the staff has received responses from all licensees.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 31, 2003

IN RESPONSE, PLEASE
REFER TO: M031002

SECRETARY

MEMORANDUM TO: John T. Larkins,
Executive Director ACRS/ACNW

William D. Travers
Executive Director for Operations

FROM: Annette L. Vietti-Cook, Secretary

SUBJECT: STAFF REQUIREMENTS - MEETING WITH ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS), 9:30 A.M., THURSDAY, OCTOBER 2, 2003, COMMISSIONERS' CONFERENCE ROOM, ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND (OPEN TO PUBLIC ATTENDANCE)

The Commission was briefed by members of the ACRS on the following topics:

1. Overview
2. Materials Degradation Issues
3. Reactor Oversight Process
4. Improvement of the Quality of Risk Information for Regulatory Decisionmaking

The ACRS should identify, as part of its normal review of advanced reactor designs, those features, approaches, and common phenomenology that could be applied to operating reactors to enhance safety, resolve issues or streamline future activities.

In the security arena, the ACRS should continue to focus its attention and expertise on technical issues associated with the progression and potential consequences of postulated terrorist actions, and the assessment of the effectiveness of mitigation strategies. The ACRS should not involve itself in issues associated with threat assessment (i.e. assessments of the likelihood of various types of events), physical security, or force-on-force assessments since these are outside the committees area of expertise, and involve intelligence information not available to the committee.

The NRC staff should:

1. explain the process currently used or planned for addressing significant operating experience in staff PRAs and for encouraging or requiring licensees to also address significant operating experience in their PRAs; and

2. provide the Commission the status, approach and plans for maintaining a current and effective set of guidance documents (Regulatory Guides, Standard Review Plans and Review Standards) for staff and applicant use. The staff should identify priority and resource considerations in this area.
(EDO) (SECY Suspense: 2/27/04)

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cc: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield
OGC
CFO
OCA
OIG
OPA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

July 13, 1994

Mr. James M. Taylor
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Taylor:

SUBJECT: SOME AREAS FOR POTENTIAL STAFF CONSIDERATION FOR OPERATING NUCLEAR POWER PLANTS AND THE REVIEW OF FUTURE PLANT DESIGNS RESULTING FROM THE ACRS REVIEW OF THE EVOLUTIONARY LIGHT WATER REACTORS

During the 411th meeting of the Advisory Committee on Reactor Safeguards, July 7-8, 1994, we completed our discussion related to the results of our recent reviews of the General Electric Nuclear Energy (GENE) Advanced Boiling Water Reactor (ABWR) (Reference 1) and the ASEA Brown-Boveri Combustion Engineering (ABB-CE) System 80+ (Reference 2) applications for design certification from the perspective of potential areas for staff action for operating nuclear power plants and the review of future plant designs. These reviews provided us with an opportunity to consider present regulatory practices and procedures vis-a-vis the "state-of-the-art" design requirements for these evolutionary light water reactors (ELWRs).

The following are some issues that we believe the staff should address as Generic Issues, as Technical Specification Improvement Program issues, as revisions to the Standard Review Plan, or as additional research needs.

1. Turbine Inspection Requirements - In the course of reviewing the potential for turbine rotor failure related to the ABWR and System 80+ designs, we learned that the staff has not prepared an appropriate set of preoperational and inservice inspection, evaluation and acceptance requirements for turbine rotor, other than those employing shrunk-on disks.

   Some current licensees have replaced, or are planning to replace, shrunk-on disk rotors with rotors of a different design. We believe that the staff should develop appropriate positions for the various designs on a priority basis.

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2. Technical Specification Requirements for Onsite Power Sources - In our letter to you dated February 17, 1994, concerning three issues relating to the 10 CFR Part 52 design certification process for ALWRs, we recommended that the staff resolve the matter of credit for ELWR alternate AC sources when 1E emergency diesel generators are out of service during power operation. We suggested that Technical Specification requirements for such onsite power sources be based on appropriate probabilistic considerations. Subsequently, ABB-CE requested such credit for System 80+ and the staff has granted an allowable outage time for a 1E emergency diesel generator of up to 14 days when the combustion turbine-generator is available. We now recommend that the staff expand this concept to include operating nuclear power plants.

   It is our understanding that Technical Specification requirements for onsite power sources will be incorporated into the Shutdown and Low Power Operations Rule.

3. Reactor Water Cleanup System Safety - The Reactor Water Cleanup (RWCU) System is of safety concern for boiling water reactor plants because it is a high-energy, non-safety system, portions of which may be located inside of the secondary containment. The secondary containment also houses numerous engineered safety features and the Fuel Pool Cooling System. For operating plants, the RWCU System supply line from the reactor vessel is usually a 6-inch pipe. A rupture of this pipe inside of the secondary containment results in a loss of reactor coolant which may create a serious environmental disruption throughout the secondary containment before it can be isolated.

   An ACRS staff report (Reference 3) identified a number of safety-related deficiencies in a similar system for the ABWR. Subsequently, GENE developed a requirement for environmental qualification of all safety-related components and the Fuel Pool Cooling System inside of the secondary containment. The qualification was based mostly on the adverse atmosphere created before complete closure of the isolation valves following a supply line pipe break. Generally, operating plants do not provide a comparable level of environmental qualification.

   Another GENE change was the addition of a second isolation valve in the supply line inside of the primary containment. This valve isolates the reactor vessel from the supply line pipe break in the event that isolation is not achieved by

closing the two primary containment isolation valves under blowdown flow conditions. The added valve is not capable of blowdown isolation. It is closed by manual actuation after the blowdown is completed, thereby achieving reactor vessel isolation and interruption of any prolonged release of Emergency Core Cooling System (ECCS) water to the break which is outside of primary containment. Operating plants may not have a similar capability. We recommend that this issue be investigated for operating BWRs.

4. Review of Chilled-Water Systems - A number of operating plants use large Chilled-Water Systems to provide essential environmental cooling. Because there is no Standard Review Plan (SRP) for these systems, the staff has used other guidance such as SRP 9.2.2 (Reactor Auxiliary Cooling Water Systems) when evaluating the safety of such systems. However, this guidance is not appropriate for the evaluation of refrigeration systems.

   In determining plant safety, the NRC staff needs to evaluate the performance of Chilled-Water Systems under various accident heat loads and during loss-of-offsite-power events, and to consider the ability of such systems to restart and function after tripping or after a prolonged station blackout. We urge that the staff develop better guidance and positions with which to enhance the scope and quality of its plant reviews of Chilled-Water Systems.

5. Filters or Water Separators for the Hardened Vents Installed on Operating BWR Containments - A great deal of analysis was done to demonstrate that the ABWR Containment Overpressure Protection System is adequate without filters or water separators. We are not aware that such an analysis has been done for those operating BWRs with hardened vents. We believe their need for filters or water separators should be reevaluated.

6. Fuel-Coolant Interactions - We are concerned that the safety case with respect to fuel-coolant interactions is based mostly on arguments of low probability of occurrence. It concerns us that neither the industry nor the NRC staff is able to predict limits to the energetics (below purely thermodynamic limits) based on either first principles or sufficient empirical evidence. We believe additional research is needed on this issue.

7. Adequacy and Use of PRA - We are concerned that there are no clear regulatory criteria for what constitutes an acceptable PRA. By accepting the PRAs which have already been submitted, the staff is essentially establishing the regulatory criteria by precedent rather than by promulgating specific requirements. We believe consideration should be given to establishing minimum requirements for PRAs.

Sincerely,

T. S. Kress
Chairman

References:

1. ACRS Report dated April 14, 1994, from J. Ernest Wilkins, Jr., ACRS Chairman, to Ivan Selin, NRC Chairman, Subject: Report on Safety Aspects of the General Electric Nuclear Energy Application for Certification of the Advanced Boiling Water Reactor Design
2. ACRS Report dated May 11, 1994, from T. S. Kress, ACRS Chairman, to Ivan Selin, NRC Chairman, Subject: Report on the Safety Aspects of the ASEA Brown Boveri-Combustion Engineering Application for Certification of the System 80+ Standard Plant Design
3. Advisory Committee on Reactor Safeguards Report by S. E. Mays and M. E. Stella, "ABWR Reactor Water Cleanup System Review," July 30, 1992

PROPOSED ACRS SAFEGUARDS AND SECURITY ACTIVITIES---- JANUARY 2004 THROUGH SEPTEMBER 2005

PROPOSED ACTIVITIES

Support Commission activities associated with the assessment of possible consequences of land and water attacks by (1) providing the Committee's technical insights as to the realism and quality of the assessment of the impact of the attack on plant structures and systems and (2) working with the NRC staff in the development of effective mitigation strategies.

Support work associated with the development of strategies/actions for plant stabilization after an attack and terrorist-attack-related emergency planning.

Follow the NRC staff's work on the potential for insider sabotage and provide comments on consequence assessment and mitigation as appropriate.

Provide comments on staff and licensee implementation of pilot plant (aircraft attack) vulnerability assessments and mitigation strategy insights.

Continue to discuss follow-on activities resulting from pilot plant studies (eg., simplified analysis tools and lessons-learned from licensee evaluations) and provide comments as needed.

Continue to work with the NRC staff and the Commission in the development of risk-informed vulnerability analysis and risk-informed decision-making.

Support the ACNW's work on the assessment of the modeling of the consequences of the use of RDDs and use of more realistic health/environmental effects models.

PROPOSED SCHEDULES

Schedules for near- term Safeguards and Security activities

November 2003

Safeguards and Security discussions scheduled on November 5 (12:30-7:00pm)

Topics to be discussed

Report on RI decision making and RI vulnerability assessment (George Apostolakis) --- **Completed**

Status of work on pilot plant vulnerability assessments and mitigation strategy insights

Safeguards and Security Subcommittee meeting at Sandia on November 12-14(½ day) to discuss pilot plant vulnerability assessments and mitigation strategy insights with SNL and LANL staff and identify issues to be addressed in an ACRS report.--- **Completed**

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December 2003
Complete ACRS report on pilot plant studies/mitigation strategies during the December 4-6 ACRS meeting

Schedules for January 2004 through September 2005 ACRS safeguards and security activities----subject to modification as NRC staff work scopes and schedules become better defined.

3rd Quarter FY04 (March-June 2004)
Subcommittee meeting (1 day) with ACRS report as needed
Topics:
Discuss NRC work on land- and water-borne threats and insights from associated pilot plant studies.
Information briefing on licensee actions and lessons resulting from licensee evaluation insights and potential mitigation strategies obtained from the pilot plant (aircraft attack) studies.
Follow-on discussions on the development of guidance on risk-informed vulnerability assessment and risk-informed decision-making and the staff's response to the ACRS's November 2003 report.
Follow-on discussions on the aircraft attack pilot plant vulnerability and mitigation strategies insights and the staff's response to the ACRS's July 2003 and December 2003 reports.

4th Quarter FY04 (July-September 2004)
Subcommittee meeting (2 ½ days at Sandia, with SNL and LASL experts in attendance) with a follow-on ACRS report
Topics:
Modeling used in and results from land- and water-borne related pilot plant studies
Adaption of tools developed for aircraft threat assessment to other threats and development of simplified analysis tools.
Modeling of the effects of explosive charges on plant structures and equipment, including the spent fuel pool.
Aviation fuel related fire propagation assessment work.
PC-based simplified structural analysis tools.
Development of land- and water-borne assault simulation models.

FY05 plans/schedules to be developed by July 2004 utilizing FY05 budget input

Plan for the
ACRS Review of the Quality of the RES Programs

I. Background

The Office of Nuclear Regulatory Research (RES) has been charged by the EDO to establish a process to evaluate the effectiveness (quality) and utility of its programs. This evaluation is mandated from the Government Performance and Results Act and needs to be in place during the next fiscal year. During the September 2003 ACRS meeting, the Committee agreed to assist RES in assessing the effectiveness and utility of the NRC research programs. The Committee review will focus on assessing the quality of the NRC research programs.

II. Objective of Review

The Objective of this review is to provide an evaluation of the quality of the Office of Nuclear Regulatory Research (RES) programs. The result of this evaluation will be in the form of a letter report to the Director , RES, providing a quantitative metric (a numerical grade) and a narrative evaluation of a selected number of projects.

III. Strategy

In order to facilitate consistent evaluation of the diverse technical projects and to minimize the burden on the ACRS members and on the NRC staff, the following strategy is proposed. This strategy is somewhat similar to the one used for the development of the 2004 Research Report.

- ACRS and RES will identify a number (8-10) of research projects for evaluation. ACRS evaluation will focus on the research addressing issues of power reactor safety. A diverse set of projects will be chosen that may include safety research in the following areas identified in the draft NRC FY 2004-2009 Strategic Plan:

  - Review safety issues that are emerging from the August 2003 blackout and develop recommendations to mitigate the effects of any future occurrences
  - Investigate materials degradation issues and the safety of aging plants
  - Risk inform existing and future regulations
  - Resolve issues related to reactor instrumentation and controls
  - Verify the increased safety of new reactor designs

  The project will not be chosen from safety research programs relating to nuclear materials and waste safety, or safeguard and security issues such as:

  - Evaluating the performance of spent fuel transportation casks under accident conditions
  - Demonstrating a probabilistic risk assessment (PRA) methodology for spent fuel storage casks
  - Evaluating the implications of international recommendations for radiation protection and new health effects research
  - Performing vulnerability assessments

- ❑ Chairman of the ACRS Safety Research Program Subcommittee will develop for each of the projects a narrative evaluation and a quantitative metric (possibly a numerical rating scheme of 1-5). The metric and narrative may address the following questions:

  - Are the objectives of the project clear?
  - Will the technical approach likely lead to a result that satisfies the objectives?
  - Are the RES staff and their contractors qualified to perform the work?
  - Have adequate quality control and quality assurance activities been implemented for both experimental and analytical efforts?
  - Is the work being performed technically sound?
  - Are the results credible?
  - Have conservative and non-conservative inputs and assumptions been identified?
  - Have uncertainties been adequately addressed?
  - Are the work products (reports, computer codes, etc.) clearly written and are of high quality?
  - Do final products adequately address the objectives?

  Cost characteristics and timeliness of the results will not be addressed in ACRS evaluation. Timeliness will be measured as a part of ' relevance' review, which is performed as a separate but related part of the overall RES quality metric.

- ❑ Cognizant members (Subcommittee Chairman) for each project will be identified. As a narrative evaluation and metric for each project is prepared , it will be provided to the cognizant member to review and discuss with the NRC staff. The projects can be reviewed as part of a Subcommittee meeting or several projects during a full Committee meeting .

- ❑ A draft letter report documenting the results of project reviews will be completed prior to the July ACRS meeting.

- ❑ The final report should be discussed and completed during the September ACRS meeting.

G:Bahadur/Retreat Agenda 11/25/03

PROPOSED SESSIONS FOR ACRS RETREAT

1. SESSION ON ACRS BUSINESS/PROCESS (Leitch)

   - o Effective P&P planning
   - o Managing presentations during full committee meetings (Role of Subcommittee Chairmen)
   - o Efficiency issues, too much paper, use of electronic media
   - o Efficient use of Subcommittees vs. Full Committee
   - o ACRS/ACNW Joint Subcommittee

2. SESSION ON ACRS EFFECTIVENESS (Powers)

   - o Is ACRS doing its job well?
     - Safety Culture/PI
     - Davis-Besse
   - o Interveners Qs that ACRS should have raised
   - o ACRS reviews need to be sharper
   - o Independence of ACRS/Commissioners' views coloring ACRS reports
   - o Individual Commissioner's meetings with ACRS

3. FUTURE TECHNICAL EXPERTISE ON ACRS (Wallis)

   - o Utilization of consultants
   - o Future technical staff needs of the Committee
   - o Future technical expertise in ACRS

4. MEMBERS/TECHNICAL STAFF INTERACTIONS (Larkins)

   - o Effective utilization of lead staff engineer
   - o Need for ACRS Action Plan
     - Priority items for ACRS review
   - o Meeting Notebook Material
   - o Summary Reports

5. SESSION ON CURRENT ACRS CHALLENGES (ACRS Chairman)

   - o SRM on 50.46 (Kress/Shack)
     - Committee members views/ACRS position
   - ~~o Adequacy of PRA phase 2 (Apostolakis)~~
   - ~~o PRA/SDP issues (Sieber/Rosen)~~ – staff
   - o PRA/Risk acceptance criteria (Bonaca/Kress)
   - ~~o Issues on advanced reactors (Kress)~~
   - ~~o ACRS Involvement in Security/Safeguards (ACRS Chairman)~~
   - o Proactive ACRS Initiatives (e.g. safety culture, PRA quality) (ACRS Chairman)
     ([illegible])

→ Add: RES Quality Review Discussion

5:00pm Friday end!

Janet/Patty Disk:Travel.Frm
9/9/94

ACRS SPECIAL TRAVEL ENDORSEMENT FORM

THIS FORM IS TO BE USED TO REQUEST ACRS ENDORSEMENT OF SPECIAL TRAVEL REQUESTS BY MEMBERS WHEN NRC SUPPORT FOR PARTIAL OR FULL REIMBURSEMENT OF EXPENSES AND/OR TIME IS DESIRED. THIS PROCEDURE IN NO WAY LIMITS THE FREEDOM OF A MEMBER TO PARTICIPATE IN A MEETING AS AN INDIVIDUAL AT PERSONAL EXPENSE. PLEASE SUBMIT THIS FORM TO THE PLANNING AND PROCEDURES SUBCOMMITTEE AT LEAST 60 DAYS PRIOR TO THE MEETING, IF POSSIBLE. SUPPLEMENTAL INFORMATION MAY BE ADDED AS DETAILS DEVELOP.

Member Name: MARIO V. BONACA **Date Submitted:** 12/3/03

Dates of Planned Trip: JUNE 14, 2004 **to** JUNE 18, 2004

Destination: BERLIN, GERMANY

Meeting or Facility to be Visited:

PSAM-7/ESREL '04

Purpose/Relevance to ACRS Business:

1 - ~~PARTE~~CIPATE TO OPENING PANEL DISCUSSION

2 - DELIVER WITH C. APOSTOLAKIS PAPER ON SAFETY CULTURE

WILL CONTRIBUTE TO SUCCESS OF CONFERENCE BY REP. ACRS. ACRS HAS MUCH INVESTED IN PRA TECHNOLOGY - ISSUE OF SAFETY CULTURE IMPORTANT TO ACRS

Participation (Invited Speaker, paper presented, etc.):

SEE ABOVE

Justification (Foreign Travel Only):

SEE ABOVE

NRC SUPPORT REQUESTED

Air Fare: Yes ✓ No _____ **Per Diem:** Yes ✓ No _____ **Days** 4

Registration: $ 790 EUR ✓ **Compensation:** Yes _____ ✓ No _____ **Days** 3

(Due April 15, 2004)