



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

April 16, 2002

The Honorable Richard A. Meserve
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Meserve:

SUBJECT: SUMMARY REPORT - 490th MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS, MARCH 7-9, 2002
AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 490th meeting, March 7-9, 2002, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports and letters. In addition, the Committee authorized Dr. John T. Larkins, Executive Director, ACRS, to transmit the memorandum noted below:

REPORTS

- Core Power Uprate for Arkansas Nuclear One, Unit 2 (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)
- Core Power Uprate for Clinton Power Station, Unit 1 (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)
- Phase 2 Pre-Application Review for AP1000 Passive Plant Design (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)

LETTERS

- Confirmatory Research Program on High-Burnup Fuel (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)

The Honorable Richard A. Meserve

- Proposed Rulemaking and Associated Guidance for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50 (Option 2) (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 19, 2002)

MEMORANDUM

- Final Rule on Decommissioning Trust Provisions (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated March 13, 2002)

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Clinton Nuclear Power Station Core Power Uprate

The Committee heard presentations by and held discussions with representatives of the NRC staff and AmerGen Energy Company regarding the core power uprate for the Clinton Power Station, Unit 1, a BWR - 6, Mark III, constant-pressure reactor. Clinton's power uprate of 20%, from 2894 MWt to 3473 MWt, will be done in steps of 7 and 13%. In general, the licensee used the Extended Power Uprate Licensing Topical Reports (ELTR 1 and ELTR 2) methodologies. Plant modifications were minimal.

Committee Action

The Committee issued a report to Chairman Meserve on this matter dated March 14, 2002.

2. Proposed NEI 00-04, "Option 2 Implementation Guideline," for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50

The Committee heard presentations by and held discussions with representatives of the NRC staff and the Nuclear Energy Institute (NEI) concerning the proposed rulemaking and associated guidance for risk-informing the special treatment requirements of 10 CFR Part 50 (Option 2). The staff provided an overview of the technical issues related to the draft rule language for 10 CFR 50.69 and proposed industry guidance in NEI 00-04, Revision B, "Option 2 Implementation Guideline." The staff discussed the criteria for structures, systems, and components (SSCs) categorization by the integrated

The Honorable Richard A. Meserve

decision-making panel (IDP) and major issues requiring resolution include long-term containment integrity, guidance for the IDP to support qualitative decisions, and use of the peer review process described in NEI 00-02, "PRA Peer Review Process Guidance." The staff also commented on issues discussed during the February 22, 2002 meeting of the ACRS Subcommittee on Reliability and Probabilistic Risk Assessment, including guidance on the use of importance measures, time-dependent failures of passive equipment, reliance on sensitivity studies and point estimates, consideration of defense in depth, and completeness of NEI 00-04. NEI representatives commented on pilot demonstration of the IDP and categorization processes and the status of plans to revise NEI 00-04 to reflect lessons learned.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated March 19, 2002.

3. Arkansas Nuclear One, Unit 2 Core Power Uprate

The Committee heard presentations by and held discussions with representatives of the NRC staff and Entergy Operations Inc., regarding the license amendment request for an increase in core thermal power for the Arkansas Nuclear One, Unit 2 (ANO-2) plant. Entergy had requested a core power uprate of 7.5% for ANO-2.

This was the first uprate for a PWR plant that the Committee has reviewed, pursuant to current licensee programs to uprate plant power. The Committee's review focused on the issues related to plant modifications; plant margins; plant operator training and operator action times; material degradation; containment response; ECCS analysis; start-up test program; and PRA analysis.

Committee Action

The Committee issued a report to Chairman Meserve on this matter, dated March 14, 2002.

4. Phase 2 Pre-Application Review of the AP1000 Design

The Committee heard presentations by and held discussions with representatives of the NRC staff and Westinghouse regarding the Phase 2 pre-application review of the Westinghouse AP1000 passive plant design.

The Honorable Richard A. Meserve

The purpose of the Phase 2 review was for the staff to develop positions on the following:

- Acceptability of the proposed use of design acceptance criteria (DAC) for particular parts of the AP1000 design
- Acceptability of certain exemptions that Westinghouse intends to request
- Applicability of the AP600 test program to the AP1000 design
- Applicability of the AP600 analyses codes to the AP1000 design

Committee Action

The Committee issued a report to Chairman Meserve on the staff's positions on each of these four issues in a letter dated March 14, 2002.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the response from the EDO, dated March 6, 2002, to comments and recommendations included in the ACNW report dated January 14, 2002, concerning risk-informed activities in the Office of Nuclear Material Safety and Safeguards. Cognizant ACRS members on the ACRS/ACNW Joint Subcommittee plan to provide comments and recommendations on this matter for consideration during a future ACNW meeting.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from February 6, 2002 through March 6, 2002, the following Subcommittee meetings were held:

- Thermal Hydraulic Phenomena/Future Plant Designs - February 13-15, 2002

The Subcommittees reviewed core power uprate applications and the associated NRC staff's safety evaluation reports for Arkansas Nuclear One, Unit 2 and Clinton Power Station, Unit 2. In addition, the Subcommittees reviewed the results of the NRC staff's Phase 2 pre-application review of the AP1000 design.

The Honorable Richard A. Meserve

- Reliability and Probabilistic Risk Assessment - February 22, 2002

The Subcommittee continued its review of risk-informed revisions to the special treatment requirements of 10 CFR Part 50 (Option 2). The Subcommittee reviewed proposed industry guidance in NEI 00-04, "Option 2 Implementation Guideline," and related matters.

- Thermal-Hydraulic Phenomena Subcommittee - March 6, 2002

The Subcommittee continued its review of the GE Nuclear Energy Topical Report, NEDC-33004P, Revision 1, "Constant Pressure Power Uprate", and the NRC staff's associated Safety Evaluation.

- Planning and Procedures - March 6, 2002

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 EXECUTIVE DIRECTOR FOR OPERATIONS

- The Committee, via a March 14, 2002 letter, has requested that the EDO address the impact of the Office of Nuclear Reactor Regulation's decision to withdraw its support from an on-going confirmatory research program on high burnup fuel.

PROPOSED SCHEDULE FOR THE 491st ACRS MEETING

The Committee agreed to consider the following topics during the 491st ACRS meeting, April 11-13, 2002:

- Final Review of the Turkey Point License Renewal Application
- Advanced Reactor Research Plan

The Honorable Richard A. Meserve

- CRDM Penetration Cracking and Reactor Pressure Vessel Head Degradation
- Westinghouse Owners Group (WOG) and Electric Power Research Institute (EPRI) Initiatives Related to Risk-Informed Inservice Inspection of Piping
- General Electric (GE) Nuclear Energy Topical Report: "Constant Pressure Power Uprate"

Sincerely,

A handwritten signature in black ink, appearing to read "G. Apostolakis", with a long horizontal stroke extending to the right.

George E. Apostolakis
Chairman

CERTIFIED

Date Issued: 4/15/2002
Date Certified: 4/24/2002

TABLE OF CONTENTS
MINUTES OF THE 490th ACRS MEETING

MARCH 7-9, 2002

- I. Chairman's Report (Open)
- II. Clinton Nuclear Power Station Core Power Uprate (Open/Closed)
- III. Proposed NEI 00-04, "Option 2" (Open)
- IV. Arkansas Nuclear One, Unit 2 Core Power Uprate (Open)
- V. Phase 2 Pre-Application Review of the AP1000 Design (Open)
- VI. Executive Session (Open)
 - A. Reconciliation of ACRS Comments and Recommendations
 - B. Report on the Meeting of the Planning and Procedures Subcommittee Held on March 6, 2002 (Open)
 - C. Future Meeting Agenda

REPORTS

- Core Power Uprate for Arkansas Nuclear One, Unit 2 (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)
- Core Power Uprate for Clinton Power Station, Unit 1 (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)
- Phase 2 Pre-Application Review for AP1000 Passive Plant Design (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)

ML 021140535

LETTERS

- Confirmatory Research Program on High-Burnup Fuel (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 14, 2002)
- Proposed Rulemaking and Associated Guidance for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50 (Option 2) (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated March 19, 2002)

MEMORANDUM

- Final Rule on Decommissioning Trust Provisions (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated March 13, 2002)

APPENDICES

- I. *Federal Register Notice*
- II. Meeting Schedule and Outline
- III. Attendees
- IV. Future Agenda and Subcommittee Activities
- V. List of Documents Provided to the Committee

490th ACRS Meeting
March 7-8, 2002

CERTIFIED

MINUTES OF THE 490th MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
MARCH 7-9, 2002
ROCKVILLE, MARYLAND

The 490th meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held in Conference Room 2B3, Two White Flint North Building, Rockville, Maryland, on March 7-9, 2002. Notice of this meeting was published in the *Federal Register* on February 21, 2002 (65 FR 8047) (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 Public Document Room at the One White Flint North Building, Mail Stop 1F-15, Rockville, MD, 20852-2738. [Copies of the transcript are available for purchase from Neal R. Gross and Co., Inc., 1323 Rhode Island Avenue, NW, Washington, DC 20005-3701, and on the ACRS/ACNW Web page at (www.NRC.gov/ACRS/ACNW).]

ATTENDEES

ACRS Members: ACRS Members: Dr. George Apostolakis (Chairman), Dr. Mario V. Bonaca (Vice Chairman), Dr. F. Peter Ford, Dr. Thomas S. Kress, Dr. Dana A. Powers, Dr. Victor H. Ransom, Dr. William J. Shack, and Mr. John D. Sieber. Dr. Graham B. Wallis, Mr. Graham M. Leitch, and Mr. Stephen L. Rosen did not attend this meeting. 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. George E. Apostolakis, 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. It was announced that Dr. Victor H. Ransom became an ACRS Member.

II. Clinton Nuclear Power Station Core Power Uprate (Open/Closed)

[Note: Mrs. Maggalean W. Weston is the Designated Federal Official for this portion of the meeting.]

Dr. Dana A. Powers, a member of the Thermal Hydraulic Phenomena Subcommittee introduced this topic to the committee. The purpose of this presentation was to provide information related to the license amendment request by AmerGen Energy Company, for a core power uprate of 20% for the Clinton Power Station, Unit 1.

NRC Staff and Industry Presentations

The staff presentation on the Clinton power uprate was made by Mr. Jon Hopkins, Mr. Richard Lobel, Mr. Robert Pettis, and Mr. George Thomas, from the Office of Nuclear Reactor Regulation (NRR). The industry presentation was made by Mr. Dale Spencer, Mr. Bob Tsai, Mr. Harold Crockett, Mr. Bill Burchill, and Mr. Terry Simpkin, from Exelon Nuclear; Mr. Fran Bolger, General Electric; and, Mr. Kent Scott, AmerGen.

The Clinton Power Station, Unit 1, is a BWR - 6, Mark III, constant-pressure reactor. Clinton's power uprate of 20%, from 2894 MWt to 3473 MWt, will be implemented as Phase 1 at 7% at the next refueling outage and Phase 2 at 13% in early 2004.

The licensee used the Extended Power Uprate Licensing Topical Reports (ELTR 1 and ELTR 2) methodologies with the exception of Emergency Core Cooling System (ECCS) performance, transient events, thermal-hydraulic stability and large transient testing.

Plant modifications to be made during Phase 1, include replacing the high pressure turbine, main power transformers, main generator hydrogen coolers and generator excitation anode transformer; increasing the generator hydrogen pressure; and upgrading five feedwater piping supports. During Phase 2, the modifications will address balance of plant (BOP) efficiency improvements.

The NRC safety evaluation includes a license condition for the feedwater nozzle cumulative usage factor. The Clinton Power Station analyses are based on NRC-approved analytical methods and codes and confirmed by on-site audits. The extended power uprate safety analysis report is consistent with NRC-accepted guidelines and generic evaluations.

Committee Action

The Committee concluded that the exceptions taken by the licensee are acceptable and that the proposed power uprate for the Clinton Power Station should be approved. They further concluded that the AmerGen program to monitor piping expected to suffer from significant flow-assisted corrosion should be rigorously conducted and its importance should be communicated to NRC staff inspecting the uprated Clinton Power Station.

NOTE: A portion of this session was closed to discuss GE Nuclear Energy proprietary information.

III. Proposed NEI 00-04, "Option 2 Implementation Guideline," for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50 (Open)

[Note: Mr. Michael T. Markley was the Designated Federal Official for this portion of the meeting.]

Dr. George E. Apostolakis, Chairman of the ACRS Subcommittee on Reliability and Probabilistic Risk Assessment (RPRA) introduced the topic to the Committee. He stated that the purpose of this meeting was to discuss the proposed rulemaking language and associated guidance for risk-informing the special treatment requirements of 10 CFR Part 50 (Option 2). He noted that the RPRA Subcommittee met on December 4, 2001, and February 22, 2002, to discuss the staff's draft rule language for 10 CFR 50.69 and proposed industry guidance in NEI 00-04, Revision B, "Option 2 Implementation Guideline." Dr. Apostolakis also noted that a list of individual ACRS member questions concerning NEI 00-04 were forwarded for consideration by the NRC staff and NEI in a memorandum dated January 24, 2002, and the NRC staff subsequently provided a list of questions to the Nuclear Energy Institute(NEI) to consider in a memorandum dated February 11, 2002.

NRC Staff Presentation

Messrs. Timothy Reed and Frank Gillespie, NRR, led the discussion for the NRC staff. Messrs. Michael Cheok and Gareth Parry, NRR, provided supporting discussion. The staff raised the following significant points during its presentation:

- The staff is largely in agreement with the categorization process described in NEI 00-04.

- Major issues requiring resolution include long-term containment integrity, guidance for the integrated decision-making panel (IDP) to support qualitative decisions, and use of the peer review process described in NEI 00-02, "PRA Peer Review Process Guidance." These issues appear to be technically resolvable.
- The staff discussed concerns raised during the February 22, 2002 Subcommittee meeting, including guidance on the use of importance measures, time-dependent failures of passive equipment, reliance on sensitivity studies and point estimates, common-cause failures, consideration of defense in depth, and completeness of NEI 00-04.
- NEI 00-04 is a work-in-progress that is expected to change substantially due to pilot feedback and staff comments. The staff requested an ACRS report highlighting major issues for the staff to consider during the reconciliation of public comments on the draft rulemaking language and guidance.

Industry Presentation

Mr. Anthony Pietrangelo, NEI, led the industry presentation. Messrs. Biff Bradley and Adrian Heymer, NEI, provided supporting discussion.

- The pilots adequately demonstrated the sufficiency of NEI 00-04. More work is needed to clarify the IDP process and selected issues such as late containment failure. The peer review process in NEI 00-02 is an important element of NEI 00-04 but is being pursued as an individual effort by each of the owners groups.
- NEI representatives expressed objection to reopening issues, such as the acceptability of using sensitivity studies, which were agreed upon as an acceptable method during the reconciliation of Regulatory Guide 1.174 for risk-informed changes to the current licensing basis. NEI representatives emphasized that the full historic regulatory process should not get redeveloped in each new pilot application.
- NEI representatives stated that a certain amount of faith has to be given to the expert panel to make appropriate judgments based on their collective skills and experience. They noted that the industry has gained a lot of experience in implementing the maintenance rule which utilizes a similar decision-making panel process and emphasized that the IDP process should not be too onerous.

Dr. Apostolakis questioned how the staff would know that the decisions of the expert panel are correct, that what they are doing is reasonable, and that mistakes are of limited consequence. The staff stated that it is a "process approval" and that monitoring is separate but an important issue. The staff further stated that the IDP would be expected to quantify the risk of categorized structures, systems, and components (SSCs), where feasible. The staff suggested that more thought needs to be given to requirements for updating the categorization as the risk analysis is updated and for monitoring risk-informed safety class 3 (RISC-3) SSCs.

Dr. Apostolakis questioned how plant operating experience would be considered in evaluating the adequacy of the categorization. In particular, he questioned whether the NRC would rely on the absence of events and incidents as a measure of success. The staff stated that it is important consider, but not confuse, other NRC programs which complement the categorization and special treatment (e.g., reactor oversight process, maintenance rule, environmental qualification, etc.). The staff noted that performance monitoring of SSCs under the maintenance rule are exempt from the proposed 10 CFR 50.69.

Dr. Bonaca questioned the extent to which the expert panel deliberations would be documented and made available for NRC review. Dr. Apostolakis stated that the approximations, assumptions, and uncertainty should be documented. Dr. Powers stated that an important element will be the training of the IDP panel. The staff agreed that the rationale of the IDP must be scrutable and that training will be needed.

Dr. Apostolakis suggested that a study be done to compare the influence of parametric and model uncertainty. He noted that NEI 00-04 may be good enough for "point values" but suggested that it would be worthwhile to know how closely they represent "mean values." He stated that such an evaluation would inspire public confidence. Dr. Powers suggested that calling something a mean value may not be very convincing. The staff acknowledged that there is some benefit in comparing the results with well-documented data. The staff stated that the primary cut sets will still drive the results and the associated uncertainty, and suggested that detailed uncertainty analysis may not be needed. Dr. Apostolakis identified research material related to these matters which the staff agreed to consider.

Dr. Kress questioned how the categorization process might be applied for plants that had already completed some form of earlier categorization using a different scheme. The staff stated that the earlier categorization may be acceptable but suggested that there should be some form of evaluation to identify variances from the process described in NEI 00-04. The staff noted that NEI 00-04 allows for a diversity of tools to accomplish the end results.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter dated March 19, 2002.

IV. Arkansas Nuclear One, Unit 2 Core Power Uprate (Open)

[Note: Mr. Paul A. Boehnert was the Designated Federal Official for this portion of the meeting.]

Mr. Sieber, cognizant ACRS Member for this issue, introduced the topic to the Committee. He noted that this power uprate review differs from recent ones in that it is the first pressurized water reactor uprate of > 5%. He also noted that the applicant used the guidance provided in a 1983 Westinghouse Topical Report (WCAP-10263 "A Review Plan for Uprating the Licensed Power of a PWR Power Plant") for its uprate submittal, and that the staff made use of the Farley plant safety evaluation report as a template for its review.

Entergy Operations Inc., Presentation

Representatives of the ANO-2 licensee (Entergy) discussed the following topics relative to the proposed 7.5% core power uprate for the plant:

- Introduction
- Plant Changes to Accommodate Uprate
- Compliance With Regulatory Requirements
- ECCS Analysis
- Review Issues
 - ATWS
 - Impact on Containment Response
 - Alloy 600 Materials
 - Flow-Accelerated Corrosion (FAC)
- Operator Training/Impact
- Startup Testing Program
- Concluding Remarks

The licensee noted that most of the plant modifications to support the uprate (e.g. new steam generators, increase in containment design pressure, etc.) have been completed. Implementation of the uprate is scheduled for this spring, following a refueling outage.

In response to Committee Members' questions, the following was noted:

- The need to increase the containment design pressure (54 psig to 59 psig) was driven by the larger volume in the replacement steam generators and was performed via analyses. Entergy used a containment test pressure of 68 psig (115% of design) to verify the new design pressure.
- Entergy will perform a 100% volumetric examination of the ANO-2 reactor vessel head nozzles during this spring's refueling outage.
- The average increase in wear rate for susceptible piping due to FAC is ~ 5 mills/year. All high-wear-rate piping is replaced on an as-needed basis with FAC-resistant materials.

NRC Staff Presentation

Mr. J. Zwolinski, NRR, introduced this topic by noting that the staff has taken actions to ensure that its uprate reviews are thorough and that the quality of the staff's safety evaluations meets the expectations of the ACRS. He said that NRR places high emphasis on its uprate reviews, as does the Commission.

NRR staff representatives discussed the following topics relative to their review of the ANO-2 power uprate request:

- Background
- NRC Review Approach/Areas of Review
- Reactor Systems Review
- Plant Systems Review
- Materials & Chemical Engineering Review
- Risk Assessment of Power Uprate

The staff noted that its review was extensive, and that no open items remain. The application meets all applicable regulations, and acceptable codes and methodologies were used by the applicant. Therefore, NRR recommends that the uprate be approved.

During the staff's discussions, it was suggested that the Committee be provided a status report on the results of the round of spring outages held to inspect the control rod drive mechanisms of suspect plants for cracking. Dr. Apostolakis expressed concern regarding the applicant's use of the EPRI human reliability analysis (HRA) models to support its probabilistic risk assessment analysis of the impact of the uprate on plant risk. He stated that these models were unreliable and have not been accepted by the

technical community; further, they are being accepted by the staff in an uncritical manner.

Committee Action

The Committee issued a report to Chairman Meserve on this matter, dated March 14, 2001.

V. Phase 2 Pre-Application Review of the AP1000 Design (Open)

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

Dr. Thomas Kress, cognizant ACRS Subcommittee Chairman, stated that the NRC staff and Westinghouse have agreed to a three-phased approach to the AP1000 standard plant design. Phase 1, which was to identify the key review issues, was completed and resulted in the identification of four key issues:

- Acceptability of the proposed use of design acceptance criteria (DAC) for particular parts of the AP1000 design,
- Acceptability of certain exemptions that Westinghouse intends to request,
- Applicability of the AP600 test program to the AP1000 design,
- Applicability of the AP600 analyses codes to the AP1000 design.

The NRC staff and Westinghouse representatives discussed the above four issues and developed certain positions. The staff's interpretation of the Commission's policy regarding the acceptability of the DAC approach is that: DAC could be used for items for which technology is rapidly changing and for items which the level of details cannot be provided at the time of certification reviews.

As a result, the staff accepted DAC for the instrumentation and control (I&C) and for the control room design. In addition, Westinghouse has proposed DAC for the AP1000 piping design. The staff has concluded that the DAC, for the piping design, would be approved based on the similarity of the AP1000 to AP600 designs, for which the certification included sufficient piping design details.

Westinghouse has proposed for the AP1000 design exemptions, regulations for the plant safety parameter display console (10 CFR 50.34(f)(2)(iv)), the auxiliary (or

emergency) feedwater system (10 CFR 50.62(c)(1)), and offsite power sources (10 CFR Part 50 Appendix A, General Design Criterion (GDC) 17).

The staff has reviewed Westinghouse's proposal for the above exemptions to the Commission's regulations and concluded that due to the similarity between the AP600 and AP1000 designs, the proposed exemptions are expected to be justifiable.

Westinghouse prepared a new AP1000 phenomena identification and ranking table (PIRT) to address the applicability of the AP600 codes and test programs. The AP1000 PIRT did not result in any new important phenomena. In addition, the scaling analyses indicated that the Pi-groups were still in the acceptable range. As a result, Westinghouse maintains that the AP600 test database used to validate the analysis codes is applicable to the AP1000 and that the codes should be approved for use in evaluating the safety status of the AP1000 design. The staff, however, claims that certain analytical models employed in the codes need to be improved or verified. These include the liquid entrainment model, the "penalty" factor used with the NOTRUMP code modeling of the passive residual heat removal heat exchanger, and the methodology to be used during core uncover to calculate peak cladding temperature. For the containment code, WGOTHIC, the staff finds its use acceptable, due to the conservative modeling approach used.

Committee's Action

The Committee issued a report to Chairman Meserve on this matter dated March 14, 2002. In its report, the Committee concluded and recommended the following:

- The staff has made a competent and thorough review of the Phase 2 issues.
- The ACRS agrees that the proposal by Westinghouse to use DAC for the piping design should be approved.
- The staff's position on the other pre-application review issues should also be approved.
- RES should further investigate acceptable ranges of ratios of Pi-groups for use in scaling.
- The ad hoc introduction of compensating processes to tune codes to the integral test data should be discouraged.

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**

[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 March 6, 2002, to comments and recommendations included in the ACNW report dated January 14, 2002, concerning risk-informed activities in the Office of Nuclear Material Safety and Safeguards. Cognizant ACRS members on the ACRS/ACNW Joint Subcommittee plan to provide comments and recommendations on this matter for consideration during a future ACNW meeting.

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

The Committee heard a report from ACRS Chairman and the Executive Director, ACRS, regarding the Planning and Procedures Subcommittee meeting held on March 6, 2002. The following items were discussed:

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

Member assignments and priorities for ACRS reports and letters for the March 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 anticipated workload for ACRS members through May 2002 was discussed. The objectives were:

490th ACRS Meeting
March 7-8, 2002

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

During this session, the Subcommittee discussed and developed recommendations on the items that require Committee decision, which are included in Section II of the Future.

Quadripartite Meeting Update

On January 14, 2002, RSK provided the ACRS with a proposed agenda for the Quadripartite meeting which is scheduled to be held on October 23-25, 2002, in Berlin, Germany. RSK requested the following from the ACRS:

- Comments on the proposed agenda
- Proposals for Chairmanship and Co-Chairmanship for certain sessions
- Total number of members, including ACNW members, expected to attend the meeting

During its February 2002 meeting, the ACRS recommended the following:

- The members should not participate in the discussion of the topic on "Response to Terrorist Attack -- Generic Issues of Commercial Airplane Crash." They could attend this session as observers.
- Dr. Apostolakis should be proposed to Chair the session on PSA/PSR/Risk-Informed Regulation.
- Dr. Wallis should be proposed to Chair the session on Thermal Hydraulic Analysis and Code Issues.
- One of the ACNW members should be proposed to Chair the session on Transport of Spent Fuel and Waste.
- Session 4, "Waste Disposal Concepts," and Session 6, "Transport of Spent Fuel and Waste," should be moved to Friday, October 25 and Session 7, "Stress

Corrosion Cracks in Pressure Retaining Components in NPP,” and Session 8, “Risk Analysis of Spent Fuel Storage,” should be moved to Thursday, October 24, 2002.

Staff Requirements Memorandum

In a Staff Requirements Memorandum (SRM) dated December 20, 2001, resulting from the ACRS meeting with the Commission on December 5, 2001, the Commission requests the following:

- The ACRS should continue to review staff efforts on risk-based PIs and improvements to the significance determination process.
- The staff, with ACRS input, should provide recommendations for resolving, in a transparent manner, apparent conflicts and discrepancies between aspects of the revised reactor oversight process that are risk-informed (e.g., significance determination process) and those that are performance-based (e.g., performance indicators).
- The ACRS should continue its efforts to ascertain regulatory challenges for future reactor designs. The Committee should also ensure that it is prepared to review NRC staff efforts on advanced reactors in the near term, including issues related to Westinghouse’s AP1000, General Atomics’ gas turbine modular helium reactor, and Exelon’s pebble bed modular reactor.

During its February 2002 meeting, the ACRS recommended the following:

- Mr. Sieber should develop a plan for addressing the reactor oversight process issues for consideration by the Planning and Procedures Subcommittee and the full Committee during the March 2002 ACRS meeting. Dr. Kress should develop a plan to address the issues on future plant designs. Both issues will be considered by the Planning and Procedures Subcommittee and the full Committee during the March 2002 meetings.

ACRS Meeting with the NRC Commissioners

The ACRS is scheduled to meet with the NRC Commissioners on Wednesday, July 10, 2002, between 2:00 and 4:00 p.m. The Committee should discuss the following topics proposed by the ACRS staff:

- Phase 2 Preapplication review of the AP1000 Design (TSK/GBW)

490th ACRS Meeting
March 7-8, 2002

- Mixed Oxide Fuel Fabrication Facility (DAP)
- Risk-Informing Special Treatment Requirements of 10 CFR Part 50 (GEA)
- Technical Issues Associated with the Pebble Bed Modular Reactor Design (TSK)
- Status Report on ACRS Activities on License Renewal (MVB/GML)
- Status Report on ACRS Activities on Power Uprate (GBW)

Celebration of the 500th ACRS Meeting

The 500th ACRS meeting celebration will be scheduled in March 2003, which is also coincidental with the Committee's 50th birthday. As requested by Dr. Kress, a list of ACRS members who served on the Committee since its inception was provided. Also, Dr. Kress developed a proposed Program Plan including a list of potential topics for panel discussion. These topics were sent to all members, requesting a selection of three topics. Comments received from the members were discussed.

ACRS Senior Fellow Position

The vacancy announcement for the ACRS Senior Fellow position has closed and the Rating Panel reviewed 31 applications (27 internal and 4 external) and provided a list of best-qualified candidates for interview. The ACRS management is in the process of interviewing the best-qualified candidates. Subsequently, they will select three candidates for interview by the members.

The Executive Director recommends that the Planning and Procedures Subcommittee members interview these candidates on behalf of the full Committee.

List of Significant Issues for CY 2002

A list of significant issues anticipated to be considered by the Committee during CY 2002 was discussed. As suggested by the Committee at the February ACRS meeting, priorities have been assigned to these issues.

Assignments for Reviewing the License Renewal Application for North Anna and Surry Nuclear Plants

The ACRS Subcommittee on Plant License Renewal, Chaired by Mr. Leitch, is scheduled to hold a meeting on Wednesday, July 31, 2002, to review the license renewal application and the NRC staff's safety evaluation report (SER) with open items for North Anna Units 1 and 2 and Surry Units 1 and 2. A CD ROM that contains the application and the Safety Analysis Reports was sent to the members on February 19,

490th ACRS Meeting
March 7-8, 2002

2002. The staff plans to provide the SER with open items to the ACRS on June 10, 2002. Assignments have been made to the members to review various Sections of the application and of the associated SER.

Joint ACRS/ACNW Workshop

The ACRS and ACNW have agreed to hold a joint workshop on August 27 (p.m.) - 29, 2002, to discuss uncertainty and the use of formal decision analysis in the regulatory decisionmaking process. This workshop will be held in the NRC Auditorium. The NRC staff and external stakeholders will be invited to participate and provide presentations.

Final Commitments Resulting from the ACRS Retreat

A list of commitments resulting from the ACRS retreat on January 24-26, 2002, and proposed actions was provided to the members during the February 2002 ACRS meeting. Members were requested to provide comments by February 15, 2002. The list of final commitments was discussed and reflects incorporation of the comments received from the members.

C. Future Meeting Agenda

Appendix IV summarizes the proposed items endorsed by the Committee for the 491st ACRS Meeting, April 11-13, 2002.

The 490th ACRS meeting was adjourned at 11:30 am on March 9, 2002.



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

April 15, 2002

MEMORANDUM TO: ACRS Members

FROM: Sherry Meador *Sherry Meador*
Technical Secretary

SUBJECT: PROPOSED MINUTES OF THE 490th MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS -
MARCH 7-9, 2002

Enclosed are the proposed minutes of the 490th 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.

Attachment:
As stated



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

April 24, 2001

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

FROM: George E. Apostolakis, Chairman
Advisory Committee on Reactor Safeguards

SUBJECT: CERTIFIED MINUTES OF THE 490th MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
(ACRS), MARCH 7-9, 2001

I certify that based on my review of the minutes from the 490th 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.

A handwritten signature in black ink, appearing to read "George E. Apostolakis", written over a horizontal line.

George E. Apostolakis, Chairman

April 24, 2001

Date

For the Nuclear Regulatory Commission.

Brenda Jo. Shelton,
NRC Clearance Officer, Office of the Chief
Information Officer.
[FR Doc. 02-4191 Filed 2-20-02; 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 March 7-9, 2002, in Conference Room T-2B3, 11545 Rockville Pike, Rockville, Maryland. The date of this meeting was previously published in the *Federal Register* on Monday, November 26, 2001 (66 FR 59034).

Thursday, March 7, 2002

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.: Clinton Nuclear Power Station Core Power Uprate (Open/Closed)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and the AmerGen Energy Company regarding the license amendment request to increase the core thermal power level for the Clinton Nuclear Power Station, Unit 1 and the associated NRC staff's Safety Evaluation Report (SER).

Note: A portion of this session may be closed to discuss GE Nuclear Energy proprietary information.

10:50 A.M.—12:15 P.M.: Proposed NEI 00-04, "Option 2 Implementation Guideline," for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50 (Open)—The Committee will hear presentations by and hold discussions with representatives of the Nuclear Energy Institute (NEI) and the NRC staff regarding proposed industry guidance in NEI 00-04 and related matters.

1:15 P.M.—3:15 P.M.: Arkansas Nuclear One, Unit 2 Core Power Uprate (Open/Closed)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and Entergy Operations, Inc. regarding the license amendment request to increase the core thermal power level for Arkansas Nuclear One, Unit 2 and the associated NRC staff's SER.

Note: A portion of this session may be closed to discuss Westinghouse proprietary information.

3:35 P.M.—7:00 P.M.: Proposed ACRS Reports (Open)—The Committee will discuss proposed ACRS reports on matters considered during this meeting.

Friday, March 8, 2002

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.: Phase 2 Pre-Application Review of the AP1000 Design (Open/Closed)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and Westinghouse regarding the results of the NRC staff's Phase 2 pre-application review of the AP1000 design.

Note: A portion of this session may be closed to discuss Westinghouse proprietary information.

10:45 A.M.—11:45 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, and organizational and personnel matters relating to the ACRS.
11:45—12:00 Noon.: 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.

1:00 P.M.—7:00 P.M.: Proposed ACRS Reports (Open)—The Committee will discuss proposed ACRS reports.

Saturday, March 9, 2002

8:30 A.M.—12:30 P.M.: Proposed ACRS Reports (Open)—The Committee will continue its discussion of proposed ACRS reports.

12:30 P.M.—1:00 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 3, 2001 (66 FR 50462). 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 and questions may be asked only by members of the Committee, its consultants, and staff. Persons desiring to make oral statements should notify Dr. Sher Bahadur, ACRS, 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 Dr. Sher Bahadur 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 Dr. Sher Bahadur if such rescheduling would result in major inconvenience.

In accordance with Subsection 10(d) Public Law 92-463, I have determined that it is necessary to close portions of this meeting noted above to discuss proprietary information per 5 U.S.C. 552b(c)(4).

Further information regarding topics to be discussed, whether the meeting has been canceled or rescheduled, 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 (telephone 301-415-0138), between 7:30 a.m. and 4:15 p.m., EST.

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/NRC/ADAMS/index.html>.

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., EST, 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.

Dated: February 14, 2002.

Andrew L. Bates,
Advisory Committee Management Officer.
[FR Doc. 02-4190 Filed 2-20-02; 8:45 am]
BILLING CODE 7590-01-P

SECURITIES AND EXCHANGE COMMISSION

Proposed Collection; Comment Request

Upon Written Request, Copies Available From: Securities and Exchange Commission, Office of Filings and Information Services, Washington, DC 20549.

Extension:

Rule 11Ab2-1 and Form SIP, SEC File No. 270-23, OMB Control No. 3235-0043.

Notice is hereby given that pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) the Securities



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

February 14, 2002

SCHEDULE AND OUTLINE FOR DISCUSSION
490th ACRS MEETING
MARCH 7-9, 2002

THURSDAY, MARCH 7, 2002, CONFERENCE ROOM 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 (GEA/JTL/SD)
 - 1.2) Items of current interest (GEA/SD)
 - 1.3) Priorities for preparation of ACRS reports (GEA/JTL/SD)

- 2) ^{10:50}8:35 - ^{10:50}10:30 A.M. Clinton Nuclear Power Station Core Power Uprate (Open/Closed)
(GBW/DAP/PAB/MWW)
 - 2.1) Remarks by the Subcommittee Chairman
 - 2.2) Briefing by and discussions with representatives of the NRC staff and the AmerGen Energy Company regarding the license amendment request to increase the core thermal power level for the Clinton Nuclear Power Station, Unit 1 and the associated NRC staff's Safety Evaluation Report (SER).

- 9:15-9:25

 NOTE: A portion of this session may be closed to discuss GE Nuclear Energy proprietary information

- 10:50 - 11:10
10:30 - 10:50 A.M.

 BREAK

- 3)

11:10 - 12:25
10:50 - 12:15 P.M.

Proposed NEI 00-04, "Option 2 Implementation Guideline," for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50 (Open) (GEA/SR/MTM)
 - 3.1) Remarks by the Subcommittee Chairman
 - 3.2) Briefing by and discussions with representatives of the Nuclear Energy Institute (NEI) and the NRC staff regarding proposed industry guidance in NEI 00-04 and related matters.

- 12:25 - 1:25
12:15 - 1:15 P.M.

 LUNCH

- 4)

1:25
1:15 - 3:15 P.M.

Arkansas Nuclear One, Unit 2 Core Power Uprate (Open/Closed)
(JDS/PAB)
 - 4.1) Remarks by the Subcommittee Chairman
 - 4.2) Briefing by and discussions with representatives of the NRC staff and Entergy Operations, Inc. regarding the license amendment request to increase the core thermal power level for Arkansas Nuclear One, Unit 2 and the associated NRC staff's SER.

NOTE: A portion of this session may be closed to discuss Westinghouse proprietary information.

- 3:25-3:45
3:15 - ~~3:35~~ P.M. ***BREAK***
- 5) 3:45-6:30
3:35 - ~~7:00~~ P.M. Proposed ACRS Reports (Open)
- 3:45-4:00 5.1) Clinton Nuclear Power Station Core Power Uprate
(GBW/DAP/PAB/MWW) *Final*
- 5:15-5:55 5.2) Arkansas Nuclear One, Unit 2 Core Power Uprate (JDS/PAB)
- 4:00-4:50 5.3) NEI 00-04, "Option 2 Implementation Guideline"
(GEA/SR/MTM)

**FRIDAY, MARCH 8, 2002, CONFERENCE ROOM 2B3, TWO WHITE FLINT NORTH,
ROCKVILLE, MARYLAND**

- 6) 8:30 - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (GEA/JTL/SD)
- 7) 8:35 - ~~10:30~~ ^{11:00} A.M. Phase 2 Pre-Application Review of the AP1000 Design
(Open/Closed) (TSK/MME/PAB)
- 7.1) Remarks by the Subcommittee Chairman
- 7.2) Briefing by and discussions with representatives of the NRC staff and Westinghouse regarding the results of the NRC staff's Phase 2 pre-application review of the AP1000 design.

NOTE: A portion of this session may be closed to discuss Westinghouse proprietary information.

- ~~10:30 - 10:45 A.M. ***BREAK***~~
- 8) ~~10:45 - 11:45 A.M.~~ ^{1:00 - 1:55} Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open) (GEA/JTL/SD)
- 8.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the full Committee during future ACRS meetings.
- 8.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, and organizational and personnel matters relating to the ACRS.
- 9) ~~11:45 - 12:00 Noon~~ ^{1:55 - 2:00} Reconciliation of ACRS Comments and Recommendations (Open)
(GEA, 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.
- ~~12:00 - 1:00 P.M. ***LUNCH***~~
- 10) ~~1:00 - 7:00 P.M.~~ ^{2:15} Proposed ACRS Reports (Open)
Discussion of proposed ACRS reports on:
- 2:15-2:50 10.1) Phase 2 Pre-Application Review of the AP1000 Design
(TSK/MME/PAB)
- 10.2) Clinton Nuclear Power Station Core Power Uprate
(GBW/DAP/PAB/MWW)

- 2:50-3:25 10.3) NEI 00-04, "Option 2 Implementation Guideline"
(GEA/SR/MTM)
3:45-5:45 10.4) Arkansas Nuclear One, Unit 2 Core Power Uprate (JDS/PAB)
6:00-6:50 10.5) AP1000 Final

**SATURDAY, MARCH 9, 2002, CONFERENCE ROOM 2B3, TWO WHITE FLINT NORTH,
ROCKVILLE, MARYLAND**

- 11) 8:30 - ~~12:30~~ ^{11:30 AM} P.M. Proposed ACRS Reports (Open)
Continue discussion of proposed ACRS reports listed under Item 10.
8:40-9:20
10:10-11:15 - RIPSD, Option 2
12) ~~12:30 - 1:00 P.M.~~ Miscellaneous (Open) (GEA/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.

9:40-10:00 High Burnup Fuel Final

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

490TH ACRS MEETING MARCH 7-9, 2002

NRC STAFF (March 7, 2002)

B. Gramm, NRR
J. Zwolinski, NRR
D. Cullison, NRR
L. Lund, NRR
B. Thomas, NRR
C. Liang, NRR
T. Attard, NRR
W. Lyon, NRR
F. Orr, NRR
H. Garg, NRR
L. Marsh, NRR
S. Richards, NRR
A. Levin, OCM/RAM
M. Koval, NRR
B. Elliot, NRR
L. Lois, NRR
S. Dinsmore, NRR
R. Barrett, NRR
C. Holden, NRR
M. Ruhn, NRR
C. Carpenter, NRR

S. Black, NRR
F. Akstulewicz, NRR
T. Reed, NRR
J. Raval, NRR
R. Goel, NRR
D. Shum, NRR
M. Cheok, NRR
D. Jeng, NRR
D. Terao, NRR
T. Scarborough, NRR
G. Bagchi, NRR
E. McKenna, NRR
T. Huang, NRR
G. Parry, NRR
D. Fischer, NRR
E. Kendrick, NRR
D. Diec, NRR
T. Croote, NRR
G. Imbro, NRR
B. Pettis, NRR
K. Desai, NRR

J. Hopkins, NRR
D. Harrison, NRR
R. Landry, NRR
E. Throm, NRR
T. Kobetz, NMSS
G. Thomas, NRR
C. Wu, NRR
D. Thatcher, NRR
J. Donoghue, NRR
T. Quay, NRR
R. Caruso, NRR
R. Eckenrode, NRR
K. Parczewski, NRR
J. Hannon, NRR
N. Trehan, NRR
M. Mitchell, NRR
S. Bajwa, NRR
M. Shauaibi, NRR
S. Magruder, NRR
K. West, NRR
J. Hayes, NRR

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

V. Bond, Entergy
J. Richardson, Entergy
T. Pietrangelo, NEI
B. Bradley, NEI
A. Heymer, NEI
M. Knapik, McGraw-Hill
M. Krammen, W
J. Cleary, W
M. Golbabai, W
J. Brown, W
R. Wilson, Entergy
M. Huff, Entergy
B. Daiber, Entergy
G. Ashley, Entergy
M. Lloyd, Entergy
T. Morrison, Entergy
R. Swanson, Entergy
R. Bernier, APS

D. Boyd, Entergy
D. James, Entergy
S. Cotton, Entergy
C. Anderson, Entergy
W. Bohlke, Exelon
E. Schweitzer, AmerGec
H. Hoang, GE
D. Pappone, GE
F. Bolger, GE
F. Maass, FRA-ANP
M. Grantham, CP&L
J. Blattner, S&L
I. Nir, GE
B. Burchill, Exelon
H. Crockett, Exelon
K. Moser, Exelon
K. Scott, AmerGen
R. Wilson, Entergy

M. Huff, Entergy
G. Stramback, GE
J. Kowalewski, Entergy
D. Adams, Entergy
C. Brinkman, W
J. Fasnacht, W

NRC STAFF (March 8, 2002)

L. Burkhart, NRR
D. Terao, NRR
R. Landry, NRR
E. Throm, NRR
J. Lyons, NRR
J. Wilson, NRR
S. Bajorek, RES
G. Bagchi, NRR
W. Jenson, NRR
M. Gamberoni, NRR
R. Eckenrode, NRR
F. Ackstulewicz, NRR
M. Kowal, NRR
Y. G. Hsii, NRR
A. Levin, OCM/RAM
M. Chiramal, NRR
J. Rosenthal, RES
N. K. Trehan, NRR
I. Schoenfeld, OEDO

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

M. Corletti, W
E. Cummins, W
J. Foret, W
W. Brown, W
C. Brinkman, W
L. Connor, Self



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

March 18, 2002

SCHEDULE AND OUTLINE FOR DISCUSSION
491st ACRS MEETING
APRIL 11-13, 2002

**THURSDAY, APRIL 11, 2002, CONFERENCE ROOM 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 (GEA/JTL/SD)
 - 1.2) Items of current interest (GEA/SD)
 - 1.3) Priorities for preparation of ACRS reports (GEA/JTL/SD)

- 2) 8:35 - 10:30 A.M. Final Review of the Turkey Point License Renewal Application (Open) (MVB/RE/SD)
 - 2.1) Remarks by the Subcommittee Chairman
 - 2.2) Briefing by and discussions with representatives of the NRC staff and the Florida Power and Light Company regarding the license renewal application for Turkey Point Units 3 and 4, and the associated staff's Safety Evaluation Report (SER).

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

- 3) 10:45 - 12:30 P.M. Advanced Reactor Research Plan (Open) (TSK/MME)
 - 3.1) Remarks by the Subcommittee Chairman
 - 3.2) Briefing by and discussions with representatives of the Office of Nuclear Regulatory Research (RES) regarding RES' draft Advanced Reactor Research Plan.

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

- 4) 1:30 - 3:30 P.M. CRDM Penetration Cracking and Reactor Pressure Vessel Head Degradation (Open) (FPF/MWW)
 - 4.1) Remarks by the Subcommittee Chairman
 - 4.2) Briefing by and discussions with representatives of the NRC staff and industry, including Davis-Besse regarding issues related to the investigation of circumferential cracks in PWR control rod drive mechanism (CRDM) penetration nozzles and weldments, and reactor pressure vessel head degradation at the Davis-Besse Nuclear Power Plant.

Other interested parties may provide their views, as appropriate.

3:30 - 3:50 P.M. *****BREAK*****

- 5) 3:50 - 5:15 P.M. Westinghouse Owners Group (WOG) and Electric Power Research Institute (EPRI) Initiatives Related to Risk-Informed Inservice Inspection of Piping (Open) (WJS/FPF/TJK/SD)
- 5.1) Remarks by the Subcommittee Chairman
 - 5.2) Briefing by and discussions with representatives of the NRC staff regarding the staff's draft safety evaluation reports on WOG and EPRI addendums to their topical reports (WCAP-14572 and EPRI TR-112657) for risk-informed inservice inspection of piping, including extension of risk-informed methods to the break exclusion region piping.

Representatives of WOG and EPRI may provide their views, as appropriate.

5:15 - 5:30 P.M. *BREAK*****

- 6) 5:30 - 7:00 P.M. Proposed ACRS Reports (Open)
- 6.1) Final Review of the Turkey Point License Renewal Application (MVB/RE/SD)
 - 6.2) Advanced Reactor Research Plan (TSK/MME)
 - 6.3) Circumferential Cracking of CRDM and PWR Vessel Head Degradation (FPF/MWW)

FRIDAY, APRIL 12, 2002, CONFERENCE ROOM 2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 7) 8:30 - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (GEA/JTL/SD)
- 8) 8:35 - 10:30 A.M. General Electric (GE) Nuclear Energy Topical Report: "Constant Pressure Power Uprate" (Open/Closed) (JDS/PAB)
- 8.1) Remarks by the Subcommittee Chairman
 - 8.2) Briefing by and discussions with representatives of the NRC staff and General Electric Nuclear Energy regarding GE Topical Report, "Constant Pressure Power Uprate," and the associated NRC staff's safety evaluation.

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

10:30 - 10:50 A.M. *BREAK*****

- 9) 10:50 - 11:45 A.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open) (GEA/JTL/SD)
- 9.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the full Committee during future ACRS meetings.
 - 9.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, and organizational and personnel matters relating to the ACRS.

- 10) 11:45 - 12:00 Noon. Reconciliation of ACRS Comments and Recommendations (Open)
(GEA, 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.
- 12:00 - 1:00 P.M. ***LUNCH***
- 11) 1:00 - 7:00 P.M. Proposed ACRS Reports (Open)
Discussion of proposed ACRS reports on:
11.1) Final Review of the Turkey Point License Renewal Application (MVB/RE/SD)
11.2) Advanced Reactor Research Plan (TSK/MME)
11.3) Circumferential Cracking of CRDM and PWR Vessel Head Degradation (FPF/MWW)
11.4) GE Topical Report, "Constant Pressure Power Uprate" (JDS/PAB)

SATURDAY, APRIL 13, 2002, CONFERENCE ROOM 2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 12) 8:30 - 12:30 P.M. Proposed ACRS Reports (Open)
Continue discussion of proposed ACRS reports listed under Item 11.
- 13) 12:30 - 1:00 P.M. Miscellaneous (Open) (GEA/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
490th ACRS MEETING
MARCH 7-9, 2002

[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

- 1 Opening Remarks by the ACRS Chairman
 1. Items of Interest, dated March 7-9, 2002

- 2 Clinton Nuclear Power Station Core Power Uprate
 2. Consultants Report: 2/13-15/02 T/H Phenomena Subcommittee Meeting, Reports of ACRS Consultant V. Shrock on February 13-15, 2002 T/H Phenomena Subcommittee Meeting: ANO-2 Plant Core Power Uprate; Clinton Power Station, Unit 1 Core Power Uprate; Phase 2 Pre-application Review for Westinghouse AP1000 Passive Plant Design Certification [Handout #1]
 3. Clinton Power Station Extended Power Uprate presentation by J. Hopkins, Senior Project Manager, NRR [Viewgraphs]
 4. Extended Power Uprate, Clinton Power Station, Unit 1 presentation by AmerGen Energy Company, LLC [CONTAINS PROPRIETARY INFORMATION]
 5. Contain 2.0 Studies for Clinton EPU presentation by E. Throm, NRR [Viewgraphs]

- 3 Proposed NEI 00-04, "Option 2 Implementation Guideline," for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50
 6. Risk-Informed Part 50 Special Treatment Requirements RIP50 Option 2 presentation by T. Reed, NRR [Viewgraphs]

- 4 Arkansas Nuclear One, Unit 2 Core Power Uprate
 7. ANO-2 Plant Core Power Uprate - NRC Response to T/H Phenomena Subcommittee Questions, e-mail from T. Alexion, NRR, to P. Boehnert, ACRS, dated 3/1/02 transmitting document titled: "ANO-2 Power Uprate Subcommittee Meeting - NRR Action/Follow-up Items" (Limited Distribution - NRC Internal Document) [Handout #4-1]
 8. Review of ANO-2 Core Power Uprate Request presentation by Entergy [Viewgraphs]
 9. Arkansas Nuclear One, Unit 2 (ANO-2) Extended Power Uprate (7.5%) presentation by T. Alexion, NRR [Viewgraphs]

- 7 Phase 2 Pre-Application Review of the AP1000 Design
 10. AP1000 Pre-Application Review presentation by L. Burkhart, NRR [Viewgraphs]
 11. AP1000 Pre-Certification Review presentation by M. Corletti, Westinghouse [Viewgraphs]
 12. Exemptions Requested and Granted for AP600 presentation by NRC staff

- [Viewgraphs]
 - 13. AP1000 "Top-Down" and "Bottom-Up" Scaling Evaluations presentation by S. Bajorek, RES [Viewgraphs]
 - 14. WGOTHIC Computer Program presentation by E. Throm, NRR [Viewgraphs]
 - 15. NRC Staff Review of NOTRUMP and LOFTRAN for AP1000 presentation by W. Jensen [Viewgraphs]
- 8 Future ACRS Activities/Report of the Planning and Procedures Subcommittee
 - 16. Future ACRS Activities/Final Draft Minutes of Planning and Procedures Subcommittee Meeting, March 6, 2002 [Handout #8.1]
- 9 Reconciliation of ACRS Comments and Recommendations
 - 17. Reconciliation of ACRS Comments and Recommendations [Handout #XX]

MEETING NOTEBOOK CONTENTS

TAB

DOCUMENTS

- 2 Clinton Power Uprate License Amendment Request
1. Table of Contents
 2. Presentation Schedule
 3. Project Status Report
 4. Memorandum, J. Singh to ACRS Members, dated January 30, 2002, transmitting Draft Safety Evaluation for Clinton Power Station EPU (Draft Predecisional)
- 3 Proposed NEI 00-04, "Option 2 Implementation Guideline," for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50
5. Table of Contents
 6. Proposed Schedule
 7. Status Report
 8. NEI handout from RPRA Subcommittee, February 22, 2002
 9. Letter received February 13, 2002, from Cynthia A. Carpenter, NRR to Anthony R. Pietrangelo, NEI, Subject: NRC Staff Review of Draft Revision B of NEI 00-04, "Option 2 Implementation Guideline"
- 4 ANO-2 Plant Core Power Uprate License Amendment Request
10. Table of Contents
 11. Presentation Schedule
 12. Project Status Report
 13. Excerpt from Working Group of Minutes of the Combined Thermal-Hydraulic Phenomena and Future Plant Designs Subcommittee Meeting, February 13-15, 2002
 14. Memorandum, J. Singh to ACRS Members, dated January 22, 2002, transmitting Draft Safety Evaluation for ANO-2 Core Power Uprate (Draft Predecisional)
- 7 Westinghouse AP1000 Phase 2 Pre-Application Review
15. Table of Contents
 16. Presentation Schedule
 17. Project Status Report
 18. Excerpt from Working Group of Minutes of the Combined Thermal-Hydraulic Phenomena and Future Plant Designs Subcommittee Meeting, February 13-15, 2002
 19. Memorandum to W. Travers, EDO, dated June 21, 2000, from J. Larkins, ACRS, Subject: AP1000 Pre-Application Review
 20. Draft SECY Paper, undated, Subject: Use of Design Acceptance Criteria and Exemptions for the AP1000 Standard Plant Design (Predecisional)
 21. Draft SECY Paper, undated, Subject: Applicability of AP600 Standard Plant Design Codes and Test Program to the AP1000 Standard Plant Design (Predecisional)

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING

MARCH 7-9, 2002

MARCH 7, 2002

Today's Date

NRC STAFF PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

NRC ORGANIZATION

Bob Gramm

NRR/DLPM

John A Zwick

NRR - DLPM

Dave Cullis

NRR/DSSA/SPXB

Louise Lund

NRR/DE/EMCB

Brian Thomas

NRR/DSSA/SPXB

Chu-yu Liang

NRR/DSSA/SRXB

Tony Attard

NRR/DPDA/PRXB

WARREN LYON

"

FRANK ORR

"

HUKAM GARG

NRR/DE/EEIB

~~R. GARG~~ L.B. Marsh

NRR/DLPM

STU RICHARDS

NRR/DLPM

Alan Levin

DEM/PRM

Mark Kowal

NRR/DSSA/SRXB

BARRY ELLIOT

NRR/DE/EMCB

Lambros Lats

" / DSSA/SRXB

Stephen Dingsmore

NRR/DSSA/SPSB

Richard Barnett

NRR/DSSA/SPSB

C. Holden

NRR/DE/EEIB

Mark Rubin

NRR/SPSB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING
MARCH 7-9, 2002

MARCH 7, 2002
Today's Date

NRC STAFF PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

NRC ORGANIZATION

BOB PETERS

NRR/DIPM

JOHN HOPKINS

NRR/DLPM

Donnie Harrison

NRR/DSSA/SPSB

RALPH LANDRY

NRR/DSSA/SRXB

Edwain D. Heam

NRR/OSR/SPLB

TIM KOBETZ

NMSS/SFPD

GEORGE THOMAS

NRR/DSSA/SRXB

CHENG-1H WU

NRR/DE/EMER

Dale Thatcher

NRR/DIPM/IEHB

JOE DONOGHUE

NRR DLPM

Q. HOLDS

NRR DE EEIB

T. QUAY

NRR/DIPM/IEHB

R. CARUSO

NRR/SRXB

R. Eckenrode

NRR/DIPM/IEHB

K. Parczewski

NRR/DE/EMCB

J. Hannon

NRR/DSSA/SPLB

N.K. TREHAN

NRR/DE/EEIB

Matthew A. Mitchell

NRR/DE/EMCB

S. Singh Baywa

NRR/DLPM/PD/IT

Mohammed Shuaibi

NRR/DLPM/DD/IT-1

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING

MARCH 7-9, 2002

MARCH 7, 2002

Today's Date

NRC STAFF PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

NRC ORGANIZATION

John Langer
F. K. Stulenicz
Jon Hopkins

SPSB/DSSA
DSSA/SRXB
NRR/DLPM

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING

MARCH 7-9, 2002

MARCH 7, 2002

Today's Date

NRC STAFF PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

NRC ORGANIZATION

Suzanne Black
F. Alstulencz
John A Zwolinski
Louise Lund
TIM REED
J. H. Ravel
R. Goep
DAVID STUM
Mike Cheek
David C. Tong
David Terao
Tom Scarborough
Goutam Bagchi
Eileen McKenna
Tai C. Huang
Garth Pamy
DAVID FISCHER
ED Alendrick
DAVID DIEC
Jammy Crook
Gene Imbro

NRR/DSSA
NRR/DSSA/SRXB
NRR-DLPM
NRR/DE/EMEB
NRR/DRIP
NRR/SPLB/DSJA
NRR/DSJA/SPLB
NRR/DSSA/SPCB
NRR/DSSA/SPSB
NRR/DE/EMEB
NRR/DE/EMEB
NRR/DE/EMEB
NRR/DE
NRR/DRIP
NRR/DSSA/SRXB
NRR/DSSA
NRR/DE/EMEB
NRR/DSSA/SRXB
NRR/DRIP
NRR/DRIP
NRR/DE/EMEB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING
MARCH 7-9, 2002

MARCH 7, 2002
Today's Date

ATTENDEES PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

AFFILIATION

Tony DiTrangeb

NEI

Biff Bradley

NEI

Adrian Heyman

NEI.

MIKE KNAPIK

McGraw-Hill

~~K.S. WEST~~

MIKE KRAUMEN

WESTINGHOUSE

JOE CLEARY

WESTINGHOUSE

MEHRAN GOLBABAI

WESTINGHOUSE

Jeff Brown

Westinghouse

ROGER WILSON

ENTERGY

Milton Huff

Entergy

Bryan Daiber

Entergy

Glenn Ashley

Entergy

Mike Lloyd

Entergy

TIMOTHY MORRISON

ENTERGY

Rich Swanson

Entergy

RICHARD BERNIER

ARIZONA PUBLIC SERVICE

Dennis Boyd

Entergy

Dale Jamer

Entergy

Sherrie Cotton

Entergy

CRAIG ANDERSON

Entergy

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING
MARCH 7-9, 2002

MARCH 7, 2002

Today's Date

ATTENDEES PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

AFFILIATION

W. H. BOHLKE

Exelon

Eric Schweitzer

Amergen

Robert Tsai

Exelon

T. W. Simpkin

Exelon

Dale Spencer

Exelon

Timothy A. Byam

AmerGen

H. A. HANKE

GE

DAN PATTON

GE

Fran Bolger

GE

Fred Maass

FRA-ANP

MARK GRANTHAM

CP&L-BRUNSWICK

Jerome Blattner

Sargent + Lundy

Israel Nir

GE

Bill Burchill

Exelon

HAROLD CROCKETT

EXELON

Kent Mosen

Exelon

Kent Scott

Amergen

Roger Wilson

ENTERGY - ARKANSAS NUCLEAR ONE

Milton Haft

Entergy - Arkansas Nuclear Corp

George Strambach

GE-NE

Joe Kowalewski

Entergy - Arkansas Nuclear One

DOYLE G. ADAMS

ENTERGY - ARKANSAS NUCLEAR ONE

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING
MARCH 7-9, 2002

MARCH 8, 2002
Today's Date

ATTENDEES PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

AFFILIATION

Charlie Brinkman

Westinghouse

JOHN FASNACHT

Westinghouse

Date

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING
MARCH 7-9, 2002

MARCH 8, 2002
Today's Date

NRC STAFF PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

NRC ORGANIZATION

LARRY BURKHART

NRR/NRLPO

David Terao

NRR/DE/EMEB

RALPH LANDRY

NRR/DSSA/SRXB

Edward D Thron

NRR/DSSA/SPLB

Jim Lyons

NRR/NRLPO

JERRY Wilson

NRR/NDCPO

Steve Bajorek

RES/DSARE/SMSAB

Goutam Bagchi

NRR/DE

Walton Jensen

NRR/DSSA/SRXB

Marsha Gamberoni

NRR/NRLPO

Richard Eckenrode

NRR/DIPM/IEHB

FAK Mewicz

NRR/DSSA/SRXB

Mark Kowal

NRR/DSSA/SRXB

Y. Gene Hsui

NRR/DSSA/SRXB

Alan Lewin

OEM/RCM

Matt Chinamist

NRR/DE/EEIB

Jack Resenthal

RES/SMSAB

N.K. TREHAN

NRR/DE/EEIB

Isabelle Schoenfeld

OEDO

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

490TH FULL COMMITTEE MEETING
MARCH 7-9, 2002

MARCH 8, 2002
Today's Date

ATTENDEES PLEASE SIGN IN FOR ACRS MEETING

PLEASE PRINT

NAME

AFFILIATION

MIKE CORLETTI

WESTINGHOUSE

ED CUMMINS

(W)

Jean-Luc FORET

Westinghouse

W. BROWN

(W)

Charles Brinkman

Westinghouse

Lynn Connor

Self