



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

August 5, 2005

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

Dear Chairman Diaz:

SUBJECT: SUMMARY REPORT - 524th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, JULY 6-8, 2005, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 524th meeting, July 6-8, 2005, 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 Graham B. Wallis, Chairman, ACRS:

- Safety Aspects of the License Renewal Application for the Donald C. Cook Nuclear Plant, Units 1 and 2, dated July 18, 2005
- Dominion Nuclear North Anna, LLC, Early Site Permit Application and the Associated NRC Final Safety Evaluation Report, dated July 18, 2005
- Assessment of the Quality of the NRC Research Projects, dated July 15, 2005

LETTERS:

Letters to Luis A. Reyes, Executive Director for Operations (EDO), NRC, from Graham B. Wallis, Chairman, ACRS:

- Proposed Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants," dated July 15, 2005
- Draft Final Regulatory Guide DG-1137, "Guidelines for Lightning Protection of Nuclear Power Plants," dated July 18, 2005

MEMORANDA:

Memoranda to Luis A. Reyes, EDO, NRC, from John T. Larkins, Executive Director, ACRS:

- Proposed Generic Letter 2005-XX, "Inaccessible or Underground Cable Failures That Disable Accident Mitigation Systems," dated July 7, 2005

- Proposed Regulatory Guide DG-1128, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants" (Revision 4 to Regulatory Guide 1.97), dated July 7, 2005
- Proposed Generic Letter 2005-XX, "Impact of Potentially Degraded HEMYC/MT Fire Barrier Materials on Compliance with Approved Fire Protection Programs," dated July 7, 2005
- Proposed Revision to Standard Review Plan Section 6.5.2, "Containment Spray as a Fission Product Cleanup System," dated July 7, 2005
- Proposed Rulemaking to Amend 10 CFR Parts 19 and 20: Collection, Reporting, and Labeling Requirements, and Clarification of Dose Determination Methodology, dated July 7, 2005

Subsequent to the meeting, the ACRS members endorsed issuing the following memoranda to Luis A. Reyes, EDO, NRC, from John T. Larkins, Executive Director, ACRS:

- Draft Final Amendment to 10 CFR 50.55a, "Codes and Standards," dated July 25, 2005
- Proposed Generic Letter 2005-XX, "Post-Fire Safe-Shutdown Circuit Analysis Spurious Actuations," dated July 25, 2005

HIGHLIGHTS OF KEY ISSUES

1. Final Review of the License Renewal Application for Donald C. Cook Nuclear Plant, Units 1 and 2

The Committee met with NRC staff and representatives of the Indiana Michigan Power Company to review the license renewal application for the Donald C. Cook Nuclear Plant (CNP), Units 1 and 2 and the associated NRC staff's final Safety Evaluation Report (SER). The applicant requested approval for continued operation of each unit for 20 years beyond the current license expiration dates. The operating licenses for Units 1 and 2 expire on October 25, 2014, and December 23, 2017, respectively. Each unit is a four-loop Westinghouse pressurized water reactor enclosed in an ice condenser containment. The applicant has replaced the steam generators for both units and plans to replace both reactor vessel heads by 2007. The applicant described the components and maintenance activities associated with the ice condenser. The draft SER issued in December 2005 contained two open items and two confirmatory items. The open item associated with the use of the System Walkdown Program to manage the effects of aging on the internal surfaces of components was resolved by the applicant by providing information to demonstrate that aging effects on internal surfaces will be effectively managed by other aging management programs. The open item associated with the Flow-Accelerated Corrosion Program was resolved by revising the program to take an exception to the Generic Aging Lessons Learned Report. The confirmatory items were resolved by updating the Final Safety Analysis Report to include additional commitments to

address fatigue. As a result of the staff's review, several components were brought into scope of license renewal. In the May 2005 final SER, the staff concluded that the applicant has satisfied the requirements of 10 CFR Part 54.

Committee Action

The Committee issued a report to the NRC Chairman regarding this matter, dated July 18, 2005, concluding that the programs established and committed to by the applicant provide reasonable assurance that CNP Units 1 and 2 can be operated in accordance with their current licensing basis for the period of extended operation without undue risk to the health and safety of the public. The Committee recommended that the application for renewal of the operating licenses for CNP Units 1 and 2 be approved.

2. Final Safety Evaluation Report Related to North Anna Early Site Permit Application

The Committee heard presentations by and held discussions with representatives of the Dominion Nuclear North Anna, LLC (Dominion) and the NRC staff regarding Dominion's application for the North Anna early site permit and the NRC staff's associated final SER. Dominion's application is to locate up to two nuclear power units on the North Anna site. Each unit will be able to produce up to 4300 Mwt. The Dominion application is based on a set of conservative, enveloping parameters defined to allow flexibility in the selection of reactor technology should a decision be made in the future to actually develop the proposed site. The proposed site is entirely within the current North Anna Power Station site about 40 miles north-northwest of Richmond, Virginia.

The NRC staff has identified a number of items that are treated either as permit conditions or as actions that must be addressed at the combined license (COL) stage. The staff has developed criteria for identifying eight permit conditions. The staff has also identified 30 items that need to be considered in conjunction with the review of a COL application should the early site permit be granted.

Committee Action

The Committee issued a report to the NRC Chairman regarding this matter, dated July 18, 2005, concluding that the proposed North Anna site, subject to the permit conditions recommended by the staff, can be used for up to two nuclear power units each of up to 4300 Mwt without undue risk to the public health and safety. In addition, the staff's final SER will contribute to the documentary basis for the mandatory public hearing. The Committee stated that it looks forward to working with the staff to improve the early site permit process.

3. Draft Commission Paper on Policy Issues Related to New Plant Licensing

The Committee continued its deliberation on the two policy issues addressed in the draft Commission paper. These two policy issues are the minimum level of safety that new plants need to meet to achieve enhanced safety, and how to account for the risk from multiple reactors at a single site.

Committee Action

The Committee plans to continue its discussion and to prepare a report on these two policy issues during its September 8-10, 2005 meeting.

4. Review of the Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection of Nuclear Power Plants"

The Committee heard presentations by and held discussions with members of the NRC staff and its contractor regarding the Regulatory Guide, DG-1137, "Guidelines for Lightning Protection of Nuclear Power Plants." This Regulatory Guide provides guidance for designing and installing lightning protection systems to ensure that electrical transients resulting from lightning phenomena do not render safety-related systems inoperable or cause spurious operation of such systems. It is intended for new plants but can also be used by existing plants.

This Regulatory Guide endorses four standards developed by the Institute of Electrical and Electronics Engineers (IEEE). The Committee agreed with the staff that DG-1137 and the endorsed IEEE standards provide adequate guidance for use by the industry in designing and installing protection systems at nuclear power plants.

Committee Action

The Committee issued a letter to the EDO regarding this matter, dated July 18, 2005, recommending that this Regulatory Guide be issued.

5. Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants"

The Committee met with NRC staff to discuss the draft final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants." The current Regulatory Guide 1.152, Revision 1 endorses IEEE Std. 7-4.3.2-1993. The new revision of the Regulatory Guide includes two regulatory positions. Regulatory Position 1, "Functional and Design Requirements," endorses IEEE Std. 7-4.3.2-2003 as an acceptable method for satisfying the NRC's regulations with respect to high functional reliability and design requirements for computers used in safety systems of nuclear power plants. Regulatory Position 2, "Security," includes added guidance on digital safety system security. It presents recommendations for security using the framework of a "waterfall" life cycle. Within each phase of this life cycle model, specific recommendations are made for system features and development activities. The staff believes industry guidance will not be ready for at least five years, and it is not prudent to delay addressing cyber security that long. When further industry guidance is available, the staff plans to revise this Regulatory Guide.

Committee Action

The Committee issued a letter to the EDO on this matter, dated July 15, 2005, recommending that the revised Regulatory Guide be issued.

6. Subcommittee Report Regarding Risk Management Technical Specification Initiative 4b

The Chairman of the joint Subcommittees on Reliability and Probabilistic Risk Assessment (PRA) and on Plant Operations provided a report to the Committee, summarizing the results of the June 15, 2005 Subcommittee meeting with the NRC staff and representatives of the Nuclear Energy Institute, Electric Power Research Institute (EPRI), South Texas Project Nuclear Operating Company (STP), Southern California Edison (SCE), and Exelon to discuss the status of the development of risk management technical specifications related to Initiative 4b titled, "Use of Configuration Management for Determining Technical Specification Completion Times, Related to the Use of Probabilistic Risk Assessment and Risk Monitoring Tools." Risk Management Technical Specifications (RMTS) Initiative 4b proposes to rely on PRA and risk monitors to calculate technical specification completion times for returning structures, systems, and components to operable status.

Committee Action

The Committee plans to review the RMTS Guidelines as well as the EPRI Human Reliability Analysis Calculator as part of its review of the STP pilot amendment for RMTS Initiative 4b after the staff has completed its review of the RMTS Guidelines.

7. Assessment of the Quality of the Selected NRC Research Projects

The Committee heard reports from the Chairmen of the ACRS panels on the status/interim results of the assessment of the quality of the NRC research projects on the Standardized Plant Analysis Risk (SPAR) Models Development Program and the Steam Generator Tube Integrity Program at the Argonne National Laboratory.

Committee Action

The Committee plans to continue its discussion of this matter during its September 2005 meeting.

8. Safeguards and Security Matters (closed session)

The Committee met with the NRC staff to discuss the status of current security-related research projects, security-related emergency preparedness activities, and plant-specific assessments for identification of mitigation strategies.

Committee Action

This briefing was for information only. The Committee plans to continue interactions with the staff at future meetings and to provide comments on specific projects, as needed.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of June 3, 2005 to comments and recommendations included in the ACRS letter dated March 11, 2005, concerning our interim letter on the draft safety evaluation report on North Anna early site permit application. The Committee in its letter commented on six major elements required in an early site permit application and the staff's findings. These elements are: nature of the proposed site; population in the vicinity of the site; geology and seismicity of the site; meteorology; potential radiological source terms; and emergency plans.

The Committee decided that it was satisfied with the EDO's response. However, regarding the meteorology element, the Committee plans to explore this matter further during its deliberation on the NRC Safety Research Programs.

- The Committee considered the EDO's response of June 9, 2005 to comments and recommendations included in the ACRS letter dated May 13, 2005, concerning guidance for assessing exemption requests from nuclear power plant licensed operator staffing requirements.

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

LIST OF MATTERS FOR THE ATTENTION OF THE EDO

- During the Committee's review of the Dominion Nuclear North Anna early site permit application and the associated final SER, the Committee noted that the use of the early site permit process has revealed several areas where the process can be refined and streamlined. The Committee plans to work with the staff to improve the early site permit process.
- The Committee plans to review the draft final Generic Letter 2005-XX, "Inaccessible or Underground Cables Failures that Disable Accident Mitigation Systems," after reconciliation of public comments.
- The Committee plans to review the draft final version of Regulatory Guide, DG-1128, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants" (Revision 4 to Regulatory Guide 1.97), after reconciliation of public comments.
- The Committee plans to review the draft final version of Generic Letter 2005-XX, "Impact of Potentially Degraded HEMYC/MT Fire Barrier Materials on Compliance With Approved Fire Protection Programs," after reconciliation of public comments.
- The Committee plans to assess the quality of the research project on reactor containment performance being conducted at Sandia National Laboratories, once a pivotal report on this research becomes available.

- The ACRS members plan to review the draft final version of the Generic Letter 2005-XX, "Post-Fire Safe-Shutdown Circuit Analysis Spurious Actuations," after reconciliation of public comments.
- The Committee plans to review the Risk Management Technical Specification Guidelines (RMTS) and the EPRI Human Reliability Analysis Calculator as part of its review of the South Texas Project pilot amendment of RMTS Initiative 4b after the staff has completed its review of the RMTS guidelines.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from June 2, 2005 through July 5, 2005, the following Subcommittee meetings were held:

- Digital Instrumentation and Control Systems - June 14, 2005
The Subcommittee met with representatives of the NRC staff to review selected digital instrumentation and control research projects and related matters.
- Reliability and Probabilistic Risk Assessment and Plant Operations - June 15, 2005
The Subcommittee met with representatives of the NRC Staff to discuss the status of the development of the Risk Management Technical Specifications Initiative 4b related to the use of PRA and risk monitoring tools.
- Planning and Procedures - July 5, 2005
The Subcommittee discussed proposed ACRS activities, practices, and procedures for conducting Committee business and organizational and personnel matters relating to ACRS and its staff.

PROPOSED SCHEDULE FOR THE 525th ACRS MEETING

The Committee agreed to consider the following topics during the 525th ACRS meeting to be held on September 8-10, 2005:

- Final Review of the License Renewal Application for Millstone Power Station, Units 2 and 3
- Interim Review of the Exelon/Clinton Early Site Permit Application and the associated NRC staff's draft Safety Evaluation Report
- Proposed Revision 4 to Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a LOCA"
- Possible Alternative Embrittlement Criteria to those in 10 CFR 50.46

- Draft Final Updates to License Renewal Guidance Documents
- Proposed ACRS Report on Policy Issues Related to New Plant Licensing
- Interim Results of the Quality Assessment of Selected NRC Research Projects
- Meeting with the EDO, Deputy EDOs, and NRC Program Office Directors to discuss items of mutual interest.

Sincerely,



Graham B. Wallis
Chairman

CERTIFIED

Date Issued: 7/29/05

Date Certified: 8/5/05

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- III. Final Safety Evaluation Report Related to North Anna Early Site Permit Application (Open)
- IV. Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants" (Open)
- V. Draft Final Revision 2 to Regulatory guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants" (Open)
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- IX. Safeguards and Security Matters (Closed)
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 - B. Report on the Meeting of the Planning and Procedures Subcommittee Held on July 5, 2005 (Open)
 - C. Future Meeting Agenda

REPORTS:

The following reports to Nils J. Diaz, Chairman, NRC, from Graham B. Wallis, Chairman, ACRS:

- Safety Aspects of the License Renewal Application for the Donald C. Cook Nuclear Plant, Units 1 and 2, dated July 18, 2005
- Dominion Nuclear North Anna, LLC, Early Site Permit Application and the Associated NRC Final Safety Evaluation Report, dated July 18, 2005
- Assessment of the Quality of the NRC Research Projects, dated July 15, 2005

LETTERS:

The following letters to Luis A. Reyes, Executive Director for Operations, NRC, from Graham B. Wallis, Chairman, ACRS:

- Proposed Revision 2 to Regulatory Guide 1.152, "Criteria for use of Computers in Safety Systems of Nuclear Power Plants," dated July 15, 2005
- Draft Final Regulatory Guide DG-1137, "Guidelines for Lightning Protection of Nuclear Power Plants," dated July 18, 2005

MEMORANDA:

The following memoranda to Luis A. Reyes, Executive Director for Operations, NRC from John T. Larkins, Executive Director, ACRS:

Proposed Generic Letter 2005-XX, "Inaccessible or Underground Cable Failures That Disable Accident Mitigation Systems," dated July 7, 2005

- Proposed Regulatory Guide DG-1128, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants" (Revision 4 to Regulatory Guide 1.97), dated July 7, 2005
- Proposed Generic Letter 2005-XX, "Impact of Potentially Degraded HEMYC/MT Fire Barrier Materials on Compliance with Approved Fire Protection Programs," dated July 7, 2005
- Proposed Revision to Standard Review Plan Section 6.5.2, "Containment Spray as a Fission Product Cleanup System," dated July 7, 2005
- Proposed Rulemaking to Amend 10 CFR Parts 19 and 20: Collection, Reporting, and Labeling Requirements, and Clarification of Dose Determination Methodology, dated July 7, 2005

APPENDICES

- I. *Federal Register Notice*
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MINUTES OF THE 524th MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
July 6-8, 2005
ROCKVILLE, MARYLAND

The 524th meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held in Conference Room 2B3, Two White Flint North Building, Rockville, Maryland, on July 6-8, 2005. Notice of this meeting was published in the *Federal Register* on June 17, 2005 (70 FR 35308) (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. Graham B. Wallis (Chairman), Dr. William J. Shack (Vice Chairman), Mr. John D. Sieber, (Member-at-Large), Dr. George E. Apostolakis, Dr. Mario V. Bonaca, Dr. Richard S. Denning, Dr. Thomas S. Kress, Dr. Dana A. Powers, Dr. Victor H. Ransom, and Mr. Stephen L. Rosen. 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. Graham B. Wallis, Committee Chairman, convened the meeting at 8:31 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. Final Review of the License Renewal Application for Donald C. Cook Nuclear Plant, Units 1 and 2 (Open)

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

The Committee met with NRC staff and representatives of the Indiana Michigan Power Company to review the license renewal application for the Donald C. Cook Nuclear Plant (CNP), Units 1 and 2 and the associated NRC staff's final Safety Evaluation Report (SER). The applicant requested approval for continued operation of each unit for 20 years beyond the

current license expiration dates. The operating licenses for Units 1 and 2 expire on October 25, 2014, and December 23, 2017, respectively. Each unit is a four-loop Westinghouse pressurized water reactor enclosed in an ice condenser containment. The applicant has replaced the steam generators for both units and plans to replace both reactor vessel heads by 2007. The applicant described the components and maintenance activities associated with the ice condenser. The draft SER issued in December 2005 contained two open items and two confirmatory items. The open item associated with the use of the System Walkdown Program to manage the effects of aging on the internal surfaces of components was resolved by the applicant by providing information to demonstrate that aging effects on internal surfaces will be effectively managed by other aging management programs. The open item associated with the Flow-Accelerated Corrosion Program was resolved by revising the program to take an exception to the Generic Aging Lessons Learned Report. The confirmatory items were resolved by updating the Final Safety Analysis Report to include additional commitments to address fatigue. As a result of the staff's review, several components were brought into scope of license renewal. In the May 2005 final SER, the staff concluded that the applicant has satisfied the requirements of 10 CFR Part 54.

Committee Action

The Committee issued a report to the NRC Chairman regarding this matter, dated July 18, 2005, concluding that the programs established and committed to by the applicant provide reasonable assurance that CNP Units 1 and 2 can be operated in accordance with their current licensing basis for the period of extended operation without undue risk to the health and safety of the public. The Committee recommended that the application for renewal of the operating licenses for CNP Units 1 and 2 be approved.

III. Final Safety Evaluation Report Related to North Anna Early Site Permit Application (Open)

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

The Committee heard presentations by and held discussions with representatives of the Dominion Nuclear North Anna, LLC (Dominion) and the NRC staff regarding Dominion's application for the North Anna early site permit and the NRC staff's associated final SER. Dominion's application is to locate up to two nuclear power units on the North Anna site. Each unit will be able to produce up to 4300 Mwt. The Dominion application is based on a set of conservative, enveloping parameters defined to allow flexibility in the selection of reactor technology should a decision be made in the future to actually develop the proposed site. The proposed site is entirely within the current North Anna Power Station site about 40 miles north-northwest of Richmond, Virginia.

The NRC staff has identified a number of items that are treated either as permit conditions or as actions that must be addressed at the combined license (COL) stage. The staff has developed criteria for identifying eight permit conditions. The staff has also identified 30 items

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that need to be considered in conjunction with the review of a COL application should the early site permit be granted.

Committee Action

The Committee issued a report to the NRC Chairman regarding this matter, dated July 18, 2005, concluding that the proposed North Anna site, subject to the permit conditions recommended by the staff, can be used for up to two nuclear power units each of up to 4300 Mwt without undue risk to the public health and safety. In addition, the staff's final SER will contribute to the documentary basis for the mandatory public hearing. The Committee stated that it looks forward to working with the staff to improve the early site permit process.

IV. Review of the Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection of Nuclear Power Plants" (Open)

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

The Committee heard presentations by and held discussions with members of the NRC staff and its contractor regarding the Regulatory Guide, DG-1137, "Guidelines for Lightning Protection of Nuclear Power Plants." This Regulatory Guide provides guidance for designing and installing lightning protection systems to ensure that electrical transients resulting from lightning phenomena do not render safety-related systems inoperable or cause spurious operation of such systems. It is intended for new plants but can also be used by existing plants.

This Regulatory Guide endorses four standards developed by the Institute of Electrical and Electronics Engineers (IEEE). The Committee agreed with the staff that DG-1137 and the endorsed IEEE standards provide adequate guidance for use by the industry in designing and installing protection systems at nuclear power plants.

Committee Action

The Committee issued a letter to the EDO regarding this matter, dated July 18, 2005, recommending that this Regulatory Guide be issued.

V. Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants" (Open)

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

The Committee met with NRC staff to discuss the draft final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants." The current Regulatory Guide 1.152, Revision 1 endorses IEEE Std. 7-4.3.2-1993. The new revision of the Regulatory Guide includes two regulatory positions. Regulatory Position 1, "Functional and Design Requirements," endorses IEEE Std. 7-4.3.2-2003 as an acceptable method for satisfying the NRC's regulations with respect to high functional reliability and design

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requirements for computers used in safety systems of nuclear power plants. Regulatory Position 2, "Security," includes added guidance on digital safety system security. It presents recommendations for security using the framework of a "waterfall" life cycle. Within each phase of this life cycle model, specific recommendations are made for system features and development activities. The staff believes industry guidance will not be ready for at least five years, and it is not prudent to delay addressing cyber security that long. When further industry guidance is available, the staff plans to revise this Regulatory Guide.

Committee Action

The Committee issued a letter to the EDO on this matter, dated July 15, 2005, recommending that the revised Regulatory Guide be issued.

IV. Draft Commission Paper on Policy Issues Related to New Plant Licensing (Open)

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

The Committee continued its deliberation on the two policy issues addressed in the draft Commission paper. These two policy issues are the minimum level of safety that new plants need to meet to achieve enhanced safety, and how to account for the risk from multiple reactors at a single site.

Committee Action

The Committee plans to continue its discussion and to prepare a report on these two policy issues during its September 8-10, 2005 meeting.

VII. Subcommittee Report Regarding Risk Management Technical Specification Initiative 4b (Open)

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

The Chairman of the joint Subcommittees on Reliability and Probabilistic Risk Assessment (PRA) and on Plant Operations provided a report to the Committee, summarizing the results of the June 15, 2005 Subcommittee meeting with the NRC staff and representatives of the Nuclear Energy Institute, Electric Power Research Institute (EPRI), South Texas Project Nuclear Operating Company (STP), Southern California Edison (SCE), and Exelon to discuss the status of the development of risk management technical specifications related to Initiative 4b titled, "Use of Configuration Management for Determining Technical Specification Completion Times, Related to the Use of Probabilistic Risk Assessment and Risk Monitoring Tools." Risk Management Technical Specifications (RMTS) Initiative 4b proposes to rely on PRA and risk monitors to calculate technical specification completion times for returning structures, systems, and components to operable status.

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Committee Action

The Committee plans to review the RMTS Guidelines as well as the EPRI Human Reliability Analysis Calculator as part of its review of the STP pilot amendment for RMTS Initiative 4b after the staff has completed its review of the RMTS Guidelines.

VIII. Assessment of the Quality of the Selected NRC Research Projects (Open)

[Note: Dr. Hossein Nourbakhsh was the Designated Federal Official for this portion of the meeting.]

The Committee heard reports from the Chairmen of the ACRS panels on the status/interim results of the assessment of the quality of the NRC research projects on the Standardized Plant Analysis Risk (SPAR) Models Development Program and the Steam Generator Tube Integrity Program at the Argonne National Laboratory.

Committee Action

The Committee plans to continue its discussion of this matter during its September 2005 meeting.

XI. Safeguards and Security Matters (Closed)

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

The Committee met with the NRC staff to discuss the status of current security-related research projects, security-related emergency preparedness activities, and plant-specific assessments for identification of mitigation strategies.

Committee Action

This briefing was for information only. The Committee plans to continue interactions with the staff at future meetings and to provide comments on specific projects, as needed.

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

[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:

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- The Committee considered the EDO's response of June 3, 2005 to comments and recommendations included in the ACRS letter dated March 11, 2005, concerning our interim letter on the draft safety evaluation report on North Anna early site permit application. The Committee in its letter commented on six major elements required in an early site permit application and the staff's findings. These elements are: nature of the proposed site; population in the vicinity of the site; geology and seismicity of the site; meteorology; potential radiological source terms; and emergency plans.

The Committee decided that it was satisfied with the EDO's response. However, regarding the meteorology element, the Committee plans to explore this matter further during its deliberation on the NRC Safety Research Programs.

- The Committee considered the EDO's response of June 9, 2005 to comments and recommendations included in the ACRS letter dated May 13, 2005, concerning guidance for assessing exemption requests from nuclear power plant licensed operator staffing requirements.

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 July 5, 2005. The following items were discussed:

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

Member assignments and priorities for ACRS reports and letters for the July ACRS 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 workloads for ACRS members through October 2005 were addressed. 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 requiring Committee action.

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Meeting with the EDO, Deputy EDOs, and Program Office Directors

The ACRS is scheduled to meet with the EDO, Deputy EDOs, and Office Directors of NRR, RES, and NMSS between 10:00 a.m. and 12 noon, on September 9, 2005 to discuss items of mutual interest. ACNW members were not able to participate in this session. The members should identify topics for discussion during the meeting.

Reappointment of Two ACRS Members

The Commission reappointed Dr. Wallis for a third term. The Commission also took exception to the current policy of a maximum three-term limit for the ACRS members and reappointed Dr. Shack for a fourth term.

Browns Ferry Unit 1 License Renewal and Start-up

The Browns Ferry Unit 1 received the operating license in 1973 and began commercial operation in 1974. The current operating license for Unit 1 expires on 12/20/2013. This Unit has been shut down since 1985 and the reactor was defueled around March 1986. The Tennessee Valley Authority (TVA) plans to restart Unit 1 in May 2007. TVA submitted an application requesting renewal of the operating licenses for Browns Ferry Units 1, 2, and 3 on January 6, 2004.

The Plant License Renewal Subcommittee held a meeting on October 5, 2005 to review the Draft Safety Evaluation Report associated with Browns Ferry Units 1, 2, and 3 license renewal application. During its April 2005 meeting, the Committee suggested that Dr. Bonaca, Plant License Renewal subcommittee Chairman, held the meeting as scheduled and prepared an interim letter outlining ACRS concerns related to endorsing renewal of the Unit 1 operating license.

On June 14, 2005, Dr. Bonaca met with Mr. Gillespie, NRR, and discussed issues associated with Unit 1 license renewal. At that meeting, it was agreed that one or two Subcommittee meetings should be held to discuss the Browns Ferry Unit 1 modifications and start-up activities. Accordingly, a Joint meeting of the ACRS Subcommittees on Plant License Renewal and on Plant Operations has been tentatively scheduled for September 21, 2005.

Self-Assessment of ACRS Performance

The ACRS/ACNW self-assessment SECY paper was sent to the Commission on July 6, 2005. The ACRS Executive Director and/or the Deputy Executive Director met with all the Commissioners, EDO, and the Program Office Directors to obtain feedback on the ACRS/ACNW performance. Feedbacks from several external stakeholders have also been received. The ACRS Executive Director provided a brief summary of the feedback received during the June meeting. The draft SECY paper was provided to the members of the Planning and Procedures Subcommittee for feedback prior to sending it to the Commission. Copies of the SECY paper will be provided to the members during the July meeting. The Planning and

524th ACRS Meeting
July 6-8, 2005

Procedures Subcommittee will discuss the actions proposed by the ACRS staff management to address the comments received from internal and external stakeholders.

ACRS Candidates

On June 28, 2005, the Screening Panel met to discuss the 42 applications in response to the solicitation for the current vacancies on the ACRS. The Panel selected six applicants to interview during August/September 2005 to fill the vacancy in the area of materials and metallurgy. The ACRS Executive Director recommended that the ACRS form a panel to interview the six applicants concurrent with the Screening Panel's interviews. The Screening Panel looked for qualified candidates to fill the vacancy on the Committee in the plant operations and the thermal-hydraulics areas. Current planning is to have a slate of candidates in the area of plant operations by September 2005.

C. Future Meeting Agenda

Appendix IV summarizes the proposed items endorsed by the Committee for the 525th ACRS Meeting, September 8-10, 2005.

The 524th ACRS meeting was adjourned at Time 12:53 p.m. on July 8, 2005.



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

July 29, 2005

MEMORANDUM TO: ACRS Members
FROM: *Noble S. Green, Jr.*
Noble S. Green, Jr.
Technical Secretary
SUBJECT: PROPOSED MINUTES OF THE 524th MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS -
July 6-8, 2005

Enclosed are the proposed minutes of the 524th 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

August 5, 2005

MEMORANDUM TO: Noble S. Green, Jr., Technical Secretary
Advisory Committee on Reactor Safeguards

FROM: Graham B. Wallis *Graham B. Wallis*
ACRS Chairman

SUBJECT: CERTIFIED MINUTES OF THE 524TH MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
(ACRS), JULY 6-8, 2005

I certify that based on my review of the minutes from the 524TH 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.

1. *The Title of the Information Collection:* Voluntary Reporting of Performance Indicators.
2. *Current OMB Approval Number:* 3150-0195.
3. *How Often the Collection Is Required:* Quarterly.
4. *Who Is Required or Asked To Report:* Power reactor licensees.
5. *The Number of Annual Respondents:* 104 reactors.
6. *The Number of Hours Needed Annually To Complete the Requirement or Request:* 84,520 (83,200 hours for reporting plus 1,320 recordkeeping hours for 33 recordkeepers).
7. *Abstract:* As part of a joint industry-NRC initiative, the NRC receives information submitted voluntarily by power reactor licensees regarding selected performance attributes known as performance indicators (PIs). PIs are objective measures of the performance of licensee systems or programs. The NRC's reactor oversight process uses PI information, along with the results of audits and inspections, as the basis for NRC conclusions regarding plant performance and necessary regulatory response. Licensees transmit PIs electronically to reduce burden on themselves and the NRC.
Submit, by August 16, 2005, comments that address the following questions:
 1. Is the proposed collection of information necessary for the NRC to properly perform its functions? Does the information have practical utility?
 2. Is the burden estimate accurate?
 3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?
 4. How can the burden of the information collection be minimized, including the use of automated collection techniques or other forms of information technology?
 A copy of the draft supporting statement may be viewed free of charge at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Room O-1 F21, Rockville, MD 20852. OMB clearance requests are available at the NRC worldwide Web site: <http://www.nrc.gov/public-involve/doc-comment/omb/index.html>. The document will be available on the NRC home page site for 60 days after the signature date of this notice.
Comments and questions about the information collection requirements may be directed to the NRC Clearance Officer, Brenda Jo. Shelton (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, by telephone at (301) 415-7233, or by Internet electronic mail to INFOCOLLECTS@NRC.GOV.

Dated at Rockville, Maryland, this 10th day of June 2005.

For the Nuclear Regulatory Commission.

Brenda Jo. Shelton,

NRC Clearance Officer, Office of Information Services.

[FR Doc. E5-3135 Filed 6-16-05; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-445 and 50-446]

TXU Generation Company, LP; Notice of Withdrawal of Application for Amendments to Facility Operating Licenses

The U.S. Nuclear Regulatory Commission (the Commission) has granted the request of TXU Generation Company, LP (the licensee) to withdraw its August 5, 2004, application for proposed amendment to Facility Operating License No. NPF-87 and Facility Operating License No. NPF-89 for Comanche Peak Steam Electric Station, Units 1 and 2, respectively, located in Somervell County, Texas.

The proposed amendments would have revised the facility Technical Specifications (TSs) pertaining to control room emergency filtration/pressurization system (CREFS). The revised TSs would have added a new condition for an inoperable control room boundary with an opening (breach) into the cable spreading room, for an extended period of time (greater than current 24 hours).

The Commission had previously issued a Notice of Consideration of Issuance of Amendment published in the *Federal Register* on August 31, 2004 (69 FR 55114). However, by letter dated May 18, 2005, the licensee withdrew the proposed change.

For further details with respect to this action, see the application for amendment dated August 5, 2004, and the licensee's letter dated May 18, 2005, which withdrew the application for license amendment. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management Systems (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams/html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in

ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or (301) 415-4737 or by e-mail to pdr@nrc.gov.

Dated at Rockville, Maryland, this 9th day of June 2005.

For the Nuclear Regulatory Commission.

Mohan C. Thadani,

Senior Project Manager, Section 1, Project Directorate IV, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

[FR Doc. E5-3134 Filed 6-16-05; 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 July 6-8, 2005, 11545 Rockville Pike, Rockville, Maryland. The date of this meeting was previously published in the *Federal Register* on Wednesday, November 24, 2004 (69 FR 68412).

Wednesday, July 6, 2005, 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 a.m.: Final Review of the License Renewal Application for Donald C. Cook Nuclear Plant, Units 1 and 2 (Open)—The Committee will hear presentations by and hold discussions with representatives of the Indiana Michigan Power Company and the NRC staff regarding the license renewal application for Donald C. Cook Nuclear Plant, Units 1 and 2 and the associated final Safety Evaluation Report prepared by the NRC staff.

10:15 a.m.-12:15 p.m.: Final Safety Evaluation Report Related to North Anna Early Site Permit Application (Open)—The Committee will hear presentations by and hold discussions with representatives of the Dominion North Anna, LLC and the NRC staff regarding the NRC staff's Final Safety Evaluation Report related to the North Anna Early Site Permit Application.

1:45 p.m.-3:15 p.m.: Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants" (Open)—The Committee will hear presentations by and hold discussions with

representatives of the NRC staff regarding the draft final revision to Regulatory Guide DG-1137, and the NRC staff's resolution of public comments.

3:30 p.m.–5 p.m.: Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants" (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the draft final revision 2 to Regulatory Guide 1.152, and the NRC staff's resolution of public comments.

5:15 p.m.–7 p.m.: Preparation of ACRS Reports (Open)—The Committee will discuss proposed ACRS reports on matters considered during this meeting as well as proposed reports on responding to the Commission request in the April 26, 2005 Staff Requirements Memorandum regarding the ACRS assessment of the quality of the NRC research projects, and on the draft Commission paper on policy issues related to new plant licensing.

Thursday, July 7, 2005, 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.–9:30 a.m.: Subcommittee Reports (Open)—The Committee will hear a report by the Chairman of the ACRS Subcommittee on Digital Instrumentation and Control (I&C) Systems regarding the digital I&C research plan and other related matters that were discussed at the June 14–15, 2005 Subcommittee meeting. Also, the Committee will hear a report by the Chairman of the Joint ACRS Subcommittee on Reliability and Probabilistic Risk Assessment and on Plant Operations regarding the Risk-Management Technical Specifications and related matters that were discussed at the June 15, 2005 Subcommittee meeting.

9:30 a.m.–10:30 a.m.: Status Report/ Interim Results of the Quality Assessment of Selected NRC Research Projects (Open)—The Committee will hear reports by the Chairmen of the ACRS Panels regarding the status/ interim results of the quality assessment of the NRC research projects on Standardized Plant Analysis Risk (SPAR) models and on the Steam Generator Tube Integrity Program at the Argonne National Laboratory.

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, including anticipated workload and member assignments.

11:45 a.m.–12 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.

1:30 p.m.–4:30 p.m.: Preparation of ACRS Reports (Open)—The Committee will discuss proposed ACRS reports.

4:45 p.m.–6:45 p.m.: Safeguards and Security Matters (Closed), Room T-8E8. The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the safeguards and security matters. (**NOTE:** This session will be closed to protect information classified as national security information and safeguards information pursuant to 5 U.S.C. 552b(c)(1) and (3).)

Friday, July 8, 2005, Conference Room T-2B3, Two White Flint North, Rockville, Maryland

8:30 a.m.–4 p.m.: Preparation of ACRS Reports (Open)—The Committee will continue its discussion of proposed ACRS reports.

4 p.m.–4:30 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 5, 2004 (69 FR 59620). 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 Cognizant ACRS staff 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 Cognizant ACRS staff 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 Cognizant ACRS staff 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 a portion of this meeting noted above to discuss and protect information classified as national security information and 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 Mr. Sam Duraiswamy, Cognizant ACRS staff (301–415–7364), 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.

Dated: June 13, 2005.

Annette Vietti-Cook,

Secretary of the Commission.

[FR Doc. E5–3132 Filed 6–16–05; 8:45 am]

BILLING CODE 7590-01-P



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

June 8, 2005

SCHEDULE AND OUTLINE FOR DISCUSSION
524th ACRS MEETING
JULY 6-8, 2005

WEDNESDAY, JULY 6, 2005, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH,
ROCKVILLE, MARYLAND

- 1) 8:30¹ - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (GBW/JTL/SD)
 - 1.1) Opening statement
 - 1.2) Items of current interest

- 2) 8:35 - ~~10:00~~^{9:30} A.M. Final Review of the License Renewal Application for Donald C. Cook Nuclear Plant, Units 1 and 2 (Open) (MVB/CS/JGL)
 - 2.1) Remarks by the Subcommittee Chairman
 - 2.2) Briefing by and discussions with representatives of the Indiana Michigan Power Company and the NRC staff regarding the license renewal application for Donald C. Cook Nuclear Plant, Units 1 and 2 and the associated final Safety Evaluation Report prepared by the NRC staff.

- 3) ~~10:00 - 10:15~~^{9:30} A.M. *****BREAK*****
~~10:15 - 12:15~~^{12:06} P.M. Final Safety Evaluation Report Related to North Anna Early Site Permit Application (Open) (DAP/MME)
 - 3.1) Remarks by the Subcommittee Chairman
 - 3.2) Briefing by and discussions with representatives of the Dominion North Anna, LLC and the NRC staff regarding the NRC staff's Final Safety Evaluation report related to the North Anna Early Site Permit Application.

- 4) 12:15 - 1:45 P.M. *****LUNCH*****
~~1:45 - 3:15~~⁰⁵ P.M. Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants" (Open) (JDS/JGL/MRS)
 - 4.1) Remarks by the Subcommittee Chairman
 - 4.2) Briefing by and discussions with representatives of the NRC staff regarding the draft final revision to Regulatory Guide, DG-1137, and the NRC staff's resolution of public comments.

Members of the public may provide their views, as appropriate.

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

~~3:15 - 3:30~~² P.M. *****BREAK*****

5) ^{2 4:45}
3:30-5:00 P.M.

Don't need the
court reporter
per Dr. Wallis

Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants" (Open)
(GEA/EAT)

- 5.1) Remarks by the Subcommittee Chairman
- 5.2) Briefing by and discussions with representatives of the NRC staff regarding the draft final revision 2 to Regulatory Guide 1.152, and the NRC staff's resolution of public comments.

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

^{4:45 - 5:03}
~~5:00~~ - 5:15 P.M.

BREAK

6) ^{03 6:15}
~~5:15~~ - 7:00 P.M.

Preparation of ACRS Reports (Open)

Discussion of proposed ACRS reports on:

- 6.1) Final Review of the License Renewal Application for D. C. Cook Nuclear Plant, Units 1 and 2 (MVB/CS/JGL)
- 6.2) North Anna Early Site Permit Application (DAP/MME)
- 6.3) Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants" (JDS/JGL/MRS)
- 6.4) Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants" (GEA/EAT)
- 6.5) Response to the April 26, 2005 Staff Requirements Memorandum Regarding the ACRS Assessment of the Quality of the NRC Research Projects (Tentative) (DAP/HPN/SD)
- 6.6) Draft Commission Paper on Policy Issues Related to New Plant Licensing (TSK/MME)

THURSDAY, JULY 7, 2005, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

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

8) 8:35 - 9:30 A.M. Subcommittee Reports (Open) (GEA/EAT/JGL)

- 8.1) Report by the Chairman of the ACRS Subcommittee on Digital Instrumentation and Control (I&C) Systems regarding the digital I&C research plan and other related matters that were discussed at the June 14-15, 2005 Subcommittee meeting.
- 8.2) Report by the Chairman of the Joint ACRS Subcommittee on Reliability and Probabilistic Risk Assessment and on Plant Operations regarding the Risk-Management Technical Specifications and related matters that were discussed at the June 15, 2005 Subcommittee meeting.

9) ^{9:15 - 9:41}
~~9:30 - 10:30~~ A.M.

Status Report/Interim Results of the Quality Assessment of Selected NRC Research Projects (Open) (DAP/GEA/JDS/EAT/CS)

- 9.1) Report by the Chairman of the ACRS Panel regarding the status/interim results of the quality assessment of the NRC research project on Standardized Plant Analysis Risk (SPAR) models.
- 9.2) Report by the Chairman of the ACRS Panel regarding the status/interim results of the assessment of the quality of the Steam Generator Tube Integrity Program at the Argonne National Laboratory.

^{9:40 - 10:00}
~~10:30 - 10:45~~ A.M.

BREAK

11 ~~10~~ ¹⁰ ~~10:45 - 11:45~~ A.M.
^{10:15 - 11:30}

Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open) (GBW/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.

^{11:30 - 12:00 - Noon}

Early on Preparation of ACRS
start Letters

10 ~~11~~ ¹⁰ ^{10:00 - 10:15}
~~11:45 - 12:00~~ Noon

Reconciliation of ACRS Comments and Recommendations (Open) (GBW, 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 - 1:30} P.M.

LUNCH

12) ^{1:30 - 4:30} P.M.
(^{3:00 - 3:15} P.M. BREAK)

Preparation of ACRS Reports (Open)

Discussion of proposed ACRS reports on:

- 12.1) Final Review of the License Renewal Application for D. C. Cook Nuclear Plant, Units 1 and 2 (MVB/CS/JGL)
- 12.2) North Anna Early Site Permit Application (DAP/MME)
- 12.3) Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants" (JDS/JGL/MRS)
- 12.4) Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants" (GEA/EAT)
- 12.5) Response to the April 26, 2005 Staff Requirements Memorandum Regarding the ACRS Assessment of the Quality of the NRC Research Projects (Tentative) (DAP/HPN/SD)
- 12.6) Draft Commission Paper on Policy Issues Related to New Plant Licensing (TSK/MME)

^{2:45 - 3:00 pm}
Break

4:30 - 4:45 P.M.

BREAK

- 13) 4:45⁰⁰ - 6:45 P.M. Safeguards and Security Matters, Room T-8E8 (Closed)
(MVB/RPS/EAT)
- 13.1) Remarks by the Subcommittee Chairman
- 13.2) Briefing by and discussions with representatives of the NRC staff regarding safeguards and security matters.

[Note: This session will be closed to protect information classified as national security information and safeguards information pursuant to 5 U.S.C. 552b(c)(1) and (3).]

FRIDAY, JULY 8, 2005, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 14) 8:30 - ^{12:53}~~4:00~~ P.M. Preparation of ACRS Reports (Open)
9:30 - 9:45 a.m. break
Continue discussion of the proposed ACRS reports listed under Item 12.
- 15) ~~4:00 - 4:30 P.M.~~ Miscellaneous (Open) (GBW/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) hard copies and (1) electronic copy of the presentation materials should be provided to the ACRS.**

APPENDIX III: MEETING ATTENDEES

524TH ACRS MEETING July 6-8, 2005

NRC STAFF (6/6/05)

D. T. Nguyen, NRR	K. Chang, NRR	J. Calvo, NRR	A. Wilson, RES
G. Makar, NRR	A. Hull, NRR	C. Muson, NRR	N. Carte, RES
J. Fair, NRR	O. Chopra, NRR	K. Winsberg, OGC	M. Evans, RES
L. Miller, NRR	T. Le, NRR	B. Sosa, NRR	R. Crotezo, NRC
B. Koo, NRR	B. Rogers, NRR	B. Harvey, NRR	P. Rebstock, NRR
C. Lauron, NRR	S. Shenz, NRR	L. Brown, NRR	Y. Kang, NRR
P. T. Kuo, NRR	J. Ayala, NRR	Y. Li, NRR	
N. Haggerty, NMSS	T. Cheng, NRR	G. Bagchi, NRR	
K. Alm-Lytz, NRR	H. Ashan, NRR	A. Feriaudez, OGC	
Y. C. (Renee) Li, NRR	G. Suber, NRR	D. Matthews, NRR	
P. Appignani, RES	M. Patel, NRR	D. Barss, NSIR	
G. Cranston, NRR	R. Sublaneko, NRR	P. Prescott, NRR	
K. Cozer, NRR	J. Rayan, NRR	L. Dudes, NRR	
D. Merzke, NRR	R. AnInele, NRR	J. Lee, NRR	
S. Lee, NRR	J. Rowley, NRR	M. Waterman, RES	
R. Hernandez, NRR	Y. K. Diaz, NRR	G. Tartal, RES	
S. K. Mitra, NRR	B. Musico, NSIR	C. Antonesu, RES	
M. Li, NRR	S. Klementowicz, NRR	B. Kemper, RES	
V. P. Longheed, RIII	R. Anand, NRR	S. Arndt, RES	
D. Janois, RES	B. Denning, NRR	P. J. Kank, NRR	

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

S. Lindvall, William Lettis & Associates	R. Ruclcer, FENOC
M. Scarpello, AEP	P. Campbell, Morgan Lewis
J. Gebbie, AEP	M. Miller, AREVA
D. Fadel, AEP	B. Kalinowski, AEP/I&M
K. Wierman, FEMA	S. Traiforos, LINK
G. Zinke, Entergy/Nustart	C. R. Marks, ISL Supporting Systems Branch
M. Smith, Dominion	R. Grumbir, AEP - D.C. Cook
L. Hall, DOE	M. NaZar, AEP - D.C. Cook
E. Grecheck, Dominion	P. Leonard, AEP - D.C. Cook
J. Hegner, Dominion	M. Stroud, Entergy
T. Banks, Dominion	G. G. Young, Entergy
R. Wood, ORNL	R. Ahrabls, Entergy
R. Kisner, Oak Ridge National Laboratory	A. Cox, Entergy
S. Dort, FENOC-BVPS License Renewal	M. Heath, PGN
D. Kunsemiller, FENOC	R. McGuire, Risk Engineering Inc.
M. Rinckel, AREVA	W. R. Lettis, William Lettis & Associate Inc.

APPENDIX III: MEETING ATTENDEES (Cont'd)

524TH ACRS MEETING
July 6-8, 2005

NRC STAFF (6/7/05)

M. Waterman, RES

C. Grimes, NRR

G. Tartal, RES

J. Rowley, NRR

B. Kemper, NRR

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

S. Traiforos, LINK

D. Ralez, LIS, Scientech

B. Kalinowski, AEP/Cood

APPENDIX III: MEETING ATTENDEES (Cont'd)

524TH ACRS MEETING
July 6-8, 2005

NRC STAFF (6/8/05)

A.T. Suegh, RES

M. Drouin, RES

M. Stutzke, NRR

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

D. Blei, Buttonwood Consulting, Inc.

V. Mumbja, BNL

J. Lehner, BNL

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
 WASHINGTON, DC 20555 - 0001

August 2, 2005

SCHEDULE AND OUTLINE FOR DISCUSSION
525th ACRS MEETING
SEPTEMBER 8-10, 2005

THURSDAY, SEPTEMBER 8, 2005, CONFERENCE ROOM T-2B3, TWO WHITE FLINT
NORTH, ROCKVILLE, MARYLAND

- | | | |
|----|--------------------------|---|
| 1) | 8:30 - 8:35 A.M. | <u>Opening Remarks by the ACRS Chairman</u> (Open) (GBW/JTL/SD)
1.1) Opening statement
1.2) Items of current interest |
| 2) | 8:35 - 9:45 A.M. | <u>Final Review of the License Renewal Application for Millstone Power Station, Units 2 and 3</u> (Open) (JDS/JGL/CS)
2.1) Remarks by the Subcommittee Chairman
2.2) Briefing by and discussions with representatives of the Dominion Nuclear Connecticut, Inc. and the NRC staff regarding the license renewal application for Millstone Power Station, Units 2 and 3 and the associated Final Safety Evaluation Report prepared by the NRC staff. |
| | 9:45 - 10:00 A.M. | ***BREAK*** |
| 3) | 10:00 - 12:00 Noon | <u>Interim Review of the Exelon/Clinton Early Site Permit Application</u> (Open) (DAP/MME)
3.1) Remarks by the Subcommittee Chairman
3.2) Briefing by and discussions with representatives of the Exelon Generation Company, LLC and the NRC staff regarding the Clinton early site permit application and the associated Draft Safety Evaluation Report prepared by the NRC staff. |
| | 12:00 - 1:30 P.M. | ***LUNCH*** |
| 4) | 1:30 - 3:30 P.M. | <u>Proposed Revision 4 to Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident"</u> (Open) (VHR/GBW/RC)
4.1) Remarks by the Subcommittee Chairman
4.2) Briefing by and discussions with representatives of the NRC staff regarding proposed Revision 4 to Regulatory Guide 1.82 and the supporting Standard Review Plan, Section 6.2.2, "Containment Heat Removal Systems," related to emergency core cooling system net positive suction head (NPSH) and the use of containment overpressure credit in calculating NPSH. |

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

3:30 - 3:45 P.M. *BREAK*****

- 5) 3:45 - 5:45 P.M. Possible Alternative Embrittlement Criteria to Those in 10 CFR 50.46 (Open) (DAP/RC)
5.1) Remarks by the Subcommittee Chairman
5.2) Briefing by and discussions with representatives of the NRC staff, Electric Power Research Institute, and Framatome regarding possible alternative embrittlement criteria to those in 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," and related matters.

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

5:45 - 6:00 P.M. *BREAK*****

- 6) 6:00 - 7:00 P.M. Preparation of ACRS Reports (Open)
Discussion of proposed ACRS reports on:
6.1) Final Review of the License Renewal Application for Millstone Power Station, Units 2 and 3 (JDS/JGL/CS)
6.2) Interim Review of the Exelon/Clinton Early Site Permit Application (DAP/MME)
6.3) Proposed Revision 4 to Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident" (VHR/GBW/RC)
6.4) Possible Alternative Embrittlement Criteria in 10 CFR 50.46 (DAP/RC)
6.5) Policy Issues Related to New Plant Licensing (TSK/MME)

FRIDAY, SEPTEMBER 9, 2005, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 7) 8:30 - 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (GBW/JTL/SD)
- 8) 8:35 - 9:45 A.M. Draft Final Updates to License Renewal Guidance Documents (Open) (MVB/CS)
8.1) Remarks by the Subcommittee Chairman
8.2) Briefing by and discussions with representatives of the NRC staff regarding draft final updates to NUREG-1800, Revision 1, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," NUREG-1801, Revision 1, "Generic Aging Lessons Learned (GALL) Report," Regulatory Guide 1.188, Revision 1 "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," and NEI 95-10,

Revision 6, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule," which is endorsed by Regulatory Guide 1.188, Revision 1.

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

9:45 - 10:00 A.M. *BREAK*****

- 9) 10:00 -12:00 Noon Meeting with the EDO, Deputy EDOs, and NRC Program Office Directors (Open) (GBW/JTL/MLS)
- 9.1) Remarks by the ACRS Chairman
 - 9.2) Briefing by and discussions with the NRC Executive Director for Operations (EDO), Deputy EDOs, and Office Directors of Nuclear Reactor Regulation, Nuclear Regulatory Research, and Nuclear Material Safety and Safeguards regarding items of mutual interest.

12:00 - 1:30 P.M. *LUNCH*****

- 10) 1:30 - 2:30 P.M. Interim Results of the Quality Assessment of Selected NRC Research Projects (Open) (DAP/GEA/JDS/GBW/EAT/CS/RC)
Discussion of the interim results of the cognizant ACRS panel's quality assessment of the NRC research projects on: Standardized Plant Analysis Risk (SPAR) Models Development Program; Steam Generator Tube Integrity Program at the Argonne National Laboratory; and the Thermal- Hydraulic Test Program at the Penn State University.
- 11) 2:30 - 3:15 P.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open) (GBW/JTL/SD)
- 11.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the full Committee during future ACRS meetings.
 - 11.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments.
- 12) 3:15 - 3:30 P.M. Reconciliation of ACRS Comments and Recommendations (Open) (GBW, 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.

3:30 - 3:45 P.M. *BREAK*****

- 13) 3:45 - 7:00 P.M. Preparation of ACRS Reports (Open)
Discussion of proposed ACRS reports on:
- 13.1) Final Review of the License Renewal Application for Millstone Power Station, Units 2 and 3 (JDS/JGL/CS)
 - 13.2) Interim Review of the Exelon/Clinton Early Site Permit Application (DAP/MME)
 - 13.3) Proposed Revision 4 to Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident" (VHR/GBW/RC)
 - 13.4) Possible Alternative Embrittlement Criteria in 10 CFR 50.46 (DAP/RC)
 - 13.5) Policy Issues Related to New Plant Licensing (TSK/MME)
 - 13.6) Draft Final Updates to License Renewal Guidance Documents (MVB/CS)

SATURDAY, SEPTEMBER 10, 2005, CONFERENCE ROOM T-2B3, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND

- 14) 8:30 - 3:00 P.M. Preparation of ACRS Reports (Open)
Continue discussion of the proposed ACRS reports listed under Item 13.
- 15) 3:00 - 3:30 P.M. Miscellaneous (Open) (GBW/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) hard copies and (1) electronic copy of the presentation materials should be provided to the ACRS.**

APPENDIX V
LIST OF DOCUMENTS PROVIDED TO THE COMMITTEE
524th ACRS MEETING
July 6-8, 2005

[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 July 6-8, 2005

2. Final Review of the License Renewal Application for Donald C. Cook Nuclear Plant, Units 1 and 2
 2. Donald C. Cook Nuclear Plant License Renewal Presentation to ACRS by NRR [PowerPoint Slides]
 3. ACRS D.C. Cook Nuclear Plant License Renewal Units 1 & 2 License Renewal Application - Safety Evaluation Report Presentation by NRR [PowerPoint Slides]

3. Final Safety Evaluation Report Related to North Anna Early Site Permit Application
 4. North Anna Early Site Permit Briefing to ACRS by Dominion [PowerPoint Slides]
 5. Presentation to the ACRS on the Early Site Permit Application for North Anna Site by NRR

4. Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants
 6. Overview of DG-1137 - Guidelines for Lightning Protection of Nuclear Power Plants Presentation by RES & ORNL [PowerPoint Slides]

5. Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants"
 7. Regulatory Guide 1.152 Revision 2 Criteria for Use of Computer in Safety Systems of Nuclear Power Plants by RES [PowerPoint Slides]

10. Future ACRS Activities/Report of the Planning and Procedures Subcommittee
 8. Future ACRS Activities/Final Draft Minutes of Planning and Procedures Subcommittee Meeting - July 5, 2005 [Handout #10]

11. Reconciliation of ACRS Comments and Recommendations
 9. Reconciliation of ACRS Comments and Recommendations [Handout #11]

Appendix V
524th ACRS Meeting

MEETING NOTEBOOK CONTENTS
Color Code List - 524th ACRS Meeting
Overtime schedule

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DOCUMENTS

- 2 Final Review of the License Renewal Application for Donald C. Cook Nuclear Plant, Units 1 and 2
1. Table of Contents
 2. Proposed Schedule
 3. Status Report, July 6, 2005
- 3 Final Safety Evaluation Report Related to North Anna Early Site Permit Application
1. Table of Contents
 2. Proposed Agenda
 3. Status Report, July 6, 2005
 4. Attachments
 - (A) Interim Letter RE: North Anna Early Site Permit Application to L.A. Reyes from G. Wallis, dated March 11, 2005
 - (B) Response to Interim Letter to G. Wallis from L.A. Reyes, dated June 3, 2005
 - (C) Memorandum to D. Powers from M. El-Zeftawy Re: Analysis of EDO Response to ACRS Interim Letter Concerning the Draft Safety Evaluation Report on North Anna Early Site Permit Application, dated June 20, 2005
- 4 Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants"
1. Table of Contents
 2. Status Report, July 6, 2005
- 5 Draft Final Revision 2 to Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants"
1. Table of Contents
 2. Proposed Schedule
 3. Status Report, July 6, 2005
 4. Attachments
 1. USNRC Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants," 05-26-05, Rev. 2, July 2005
 2. Listing of Public Comments DG - 1130 (ML051460315)
 3. Resolution of Public Comments DG-1130 (ML051460342)
- 13 5. Proposed Schedule, ACRS Safeguards and Security Matters, dated July 7, 2005

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING

July 6-8, 2005

TODAY'S DATE: July 6, 2005

NRC STAFF - PLEASE SIGN BELOW

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NAME	NRC ORGANIZATION
JOHN G. LAMB	ACRS
✓ DAT T NGUYEN	NRR
✓ GREG MAKAR	NRR
✓ John Fair	nrr
✓ Leslie Miller	NRR
✓ Bill Koo	NRR
✓ Carolyn Lauran	NRR
✓ P T KUO	NRR
Neil Haggerty	NMSS
Kirsi Alm-Lytz	NRR
Y. C. (Rene) Li	NRR
Pete Appignani	RES
G. CRANSTON	NRR
KURT COZENS	NRR
DANIEL MERKIS	NRR
SAMSON LEE	NRR/DRIP/RLEP
Paul Hernandez	NRR/DSSA/SPLB
S. K. MITRA	NRR/DRIP/RLEP
Michael Li	NRR/DRIP/RLEP
✓ Patricia Loughheed	NRC/R11
Dubhui Joshi	RESIDET/MERB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING

July 6-8, 2005

TODAY'S DATE: July 6, 2005

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NAME	NRC ORGANIZATION
Kenneth Chang	NRR/DRIP/RLEP
Amy Hull	NRR/DRIP/RLEP
Om Chopra	NRR/DRDE/EEIB
Tommy Le	NRR/RLEP
Bill Rogers	NRR/DIPM
Simon Sheng	NRR/DE/EMCB
Juan Ayala	NRR/DRIP/RLEP
Thomas Cheng	NRR/DE/EMCB
HANS ASHMAN	NRR/DE/EMCB
Gregory SUBER	NRR/DRIP/RLEP
Manan Patel	NRR/DE/EEIB
Ram Subbarao	NRR/DRIP/RLEP
J. Rajan	NRR/DE/EMCB
R. Ahluwalia	NRR/RLEP
Jonathan Rowley	NRR/RLEP
Yaira K. Diaz	NRR/RLEP
Bruce Musico	NRR/DRIP/EPD
Stephen Klementowicz	NRR/DIPM
RAJ ANAND	NRR/DRIP/RNRP
Bob Denvir	NRR/DOSA/SPSB
Jose CALVO	NRR/DE/EEIB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING

July 6-8, 2005

TODAY'S DATE: July 6, 2005

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NAME	NRC ORGANIZATION
Cliff Munson	NRR/DE/EMEB
Kataryn Winsberg	OGC
Belkys Sosa	NRR/DAP/RNRP
Brad Harvey	NRR/DSSA/SPSB-C
Leta Brown	NRR/DSSA/SPSB-C
Yong Li	NRR/DE/EMEB
Goutam Bagchi	NRR/DE/EMEB
Antonio Fernandez	OGC
DAVID MATTHEWS	NRR/DRIP -
Dan Barss	NSIR/DPR/EPD
Paul Prescott	NRR/DIPM/IPSB
Laura Dudes	NRR/DRIP/RNRP
Jay Lee	NRR/DSSA/SPSB
Mike Waterman	NRR RES/DET/ERAB
George Tartal	RES/DET/ERAB
Christina Antonescu	RES/DET/ERAB
BILL KEMPER	RES/DET/ERAB/ICS
STEVEN ARNDT	RES/DET/ERAB
Qblm S. KANG	OGC NRS/OGC/MST
Adam Wilson	RES/DET/MEB
Norbert Carte	RES/DFT/ERAB/ICS
Michele Evans	RES/DET/ERAB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING
July 6-8, 2005

July 6, 2005
Today's Date

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<u>NAME</u>	<u>AFFILIATION</u>
SCOTT LINDVALL	William Lettis & Assoc
MICHAEL SCARPELLO	AEP
Joel Gebbro	AGP
Dan Faded	AEP
KEN WIERNMAN	FEMA
George Zinke	Entergy / NUSTART
MARVIN Smith	Dominion
LYNN Hall	DOE
EUGENE GRECHECK	Dominion
JOE HEGNER	Dominion
Tony Banks	Dominion
Richard Wood	ORNL
Roger Kisner	Oak Ridge National Laboratory
Rick Croker	MRL
Paul Rebstock	NRC/NRR/DE/EEIB-IFC
Youngdo Kang	NRR/DE/EEIB

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING
July 6-8, 2005

July 6, 2005
Today's Date

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<u>NAME</u>	<u>AFFILIATION</u>
STEVEN DORT	FENOC - BUPS LICENSE RENEWAL
DAVID KUNSEMIER	FENOC
Mark Rinckel	AREVA
Roger Rucker	FENOC
Patricia Campbell	Morgan Lewis
MATTHEW MURKIN	AREVA
BUS KALINOWSKI	AEP/IDM
SPYROS TRAFOROS	LINK
Clifford R MARKS	TSL supporting Systems Branch
RICHARD GRUMBIR	AEP - D.C. Cook
Mano Nazar	AEP - Cook
Paul Leonard	AEP - Cook
MIKE STROUD	ENERGY
GARRY G. YOUNG	ENERGY
ROSA AHRABIS	ENERGY
ALAN COX	ENERGY
Mike Heath	PGN
ROBIN MCGUIRE	RISK ENGINEERING INC
William R Lettis	William Lettis, Assoc. Inc

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING

July 6-8, 2005

TODAY'S DATE: July 7, 2005

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NAME

NRC ORGANIZATION

Mike Waterman

RES/~~DET~~/ERAB

Chris Grimes

NRR/DE

~~George~~ George Tartal

RES/DET/ERAB

Jonathan Rowley

NRR/RLEP

~~Bob KA~~

BILL KEMPER

NRR/DET/ERAB/IFCS

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING
July 6-8, 2005

July 7, 2005
Today's Date

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NAME

AFFILIATION

SPYRO TRAFIMOS

LINK

Dean Rakof

LIS, Scintech

BOB KALINOWSKI

AEP/COO

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th FULL COMMITTEE MEETING
July 6-8, 2005

July 8, 2005
Today's Date

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AFFILIATION

DENNIS BLEI

BUTTONWOOD CONSULTING, INC.

Vinod Mumbja

BNL

John Lehner

BNL

ITEMS OF INTEREST

524th ACRS MEETING

JULY 6-8, 2005

ITEMS OF INTEREST

524th ACRS MEETING

JULY 6-8, 2005

**ITEMS OF INTEREST
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
524th MEETING
July 6-8, 2005**

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SPEECHES

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- Remarks by Commissioner, Peter B. Lyons, before the American Nuclear Society Annual Conference, "The Next 50 Years: Creating Opportunities," San Diego, California, - ANS President's Special Session, "Manpower for the Nuclear Industry - A Continuing Need, June 7, 2005 6-9

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- Letter from Acting Chairman, Edward McGaffigan, Jr. to the Honorable Tom Davis, Chairman, Committee on Government Reform, U.S. House of Representatives dated June 7, 2005 14-18

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- Memorandum and Order, in the Matter of Duke Energy Corporation (Catawba Nuclear Station, Units 1 and 2), Docketed - June 20, 2005, Served - June 20, 2005 22-28

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- EA-05-037 - Palo Verde (Arizona Public Service Company): Notice of Violation (NRC Inspection Report No. 05000528/2005011, 0500529/2005011, and 05000530/2005011), dated June 27, 2005 29-33
- EA-04-174 - Vermont Yankee (Entergy Nuclear Operations, Inc.) Vermont Yankee Nuclear Power Station - Notice of Violation (NRC Special Inspection Report No. 50-271/04-07, dated June 22, 2005, 34-37

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- NRC Information Notice 2005-15: Three-Unit Trip and Loss of Offsite Power at Palo Verde Nuclear Generating Station, dated June 1, 2005 42-45
- NRC Information Notice 2005-14: Fire Protection Findings on Loss of Seal Cooling to Westinghouse Reactor Coolant Pumps, dated June 1, 2005 46-51
- NRC Regulatory Issue Summary 2005-08 - Endorsement of Nuclear Energy Institute (NEI) Guidance, "Range of Protective Actions for Nuclear Power Plant Incidents", dated June 6, 2005 52-56

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- Yellow Announcement No. 043: Managerial Assignments and Selections, dated June 24, 2005 57-58

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President Discusses Energy Policy, Economic Security - Calvert Cliffs Nuclear Power Plant - Lusby, Maryland, dated June 22, 2005 59-66

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- Article entitled, "Another Term for McGaffigan Appears to be Strong Possibility," Volume 27/ Number 12/ June 13, 2005 67-69
- Article entitled, PSU Research Challenges NRC on Pipe Breaks, Volume 27/ Number 12 June 13, 2005 70-72
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- Article entitled, "Tsunami" Wave of Retirements Creeping Up To Hit NRC, Industry, Volume 27/ Number 13/ June 27, 2005 84-86
- Article entitled, Pressurizer Heater Element Error At Palo Verde-3 Being Scrutinized Volume 27/ Number 13/ June 27, 2005 87-89
- Article entitled, Delay in Vessel Head Replacement at Point Beach Growing Expensive, Volume 27/ Number 13/ June 27, 2005 90
- Article entitled, Regulatory Guide 1.200 Pilot Results Promising, But Industry Expects Quick Benefits, Volume 27/ Number 13/ June 27, 2005 91-92
- Article entitled, NRC Expects 28 More Power Uprate Request by 2010, Staff Says, Volume 27/ Number 13/ June 27, 2005 93-94
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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-05-008

**The Role of the Nuclear Regulatory Commission
In
Future Nuclear Energy Utilization in the United States**

**Peter B. Lyons
Commissioner
Nuclear Regulatory Commission**

**American Nuclear Society Annual Conference
The Next 50 years: Creating Opportunities
San Diego, California
June 5-9, 2005**

I've had the honor of addressing several previous meetings of the American Nuclear Society during my years on the staff of the U.S. Senate. I am now speaking to you as the newest Commissioner at the Nuclear Regulatory Commission (NRC).

I was sworn in as a Commissioner about 4 months ago, and I've been rapidly learning details of the Commission's operations since then. Based on my education during those months, I'd like to share with you today the role of NRC with respect to future nuclear energy utilization in the U.S.

There is no doubt in my mind that our nation will be challenged to meet its growing needs for electricity generation in future decades. I believe that we should encourage fuel diversity as we strive to meet these challenges, seek to minimize pressure on limited supplies of natural gas, and reduce our dependence on foreign energy sources.

For this new electricity generation, we need to tap renewables as much as possible. But the intermittent character of solar and wind systems means that they can never play a dominant role in supply of baseload electricity needs, unless we invent new, very low cost, energy storage systems. Our large coal reserve provides another opportunity for expanded electricity generation, but significant expansion of that resource will depend on development of cost effective, low emission plants.

The only other source of significant new electricity generation within the next few decades is nuclear energy. But answers to many questions will dictate whether nuclear energy will play a strong supporting role.

In any discussion of nuclear power and the potential for new plant construction, we must always remember that the entire industry has a vital job to attend to first-safe and secure operations for existing plants. The public needs to be confident of ongoing safe and secure performance of existing nuclear plants to support the potential for new nuclear plants.

The Nuclear Regulatory Commission has the responsibility to establish and enforce the safety and security standards for all civilian applications of nuclear technologies. Its Congressionally-mandated mission is 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.

In my view, without the nuclear power industry's continued perseverance toward adequate safety and security, nuclear energy will not play a future role, and our nation will have an immense energy shortfall.

The theme of your conference focuses on a "half century" view. The requirement for safe and secure operation of our nuclear plants certainly will remain during that time period, or at least for as long as we operate nuclear plants. But my own view is that the time frame within which we will determine our nation's future capabilities in nuclear energy is far more compressed, perhaps a couple of decades at the most. Unless near-term progress is demonstrated in the United States within that shorter time window, which includes construction of a significant number of new plants, we may lose much of our technical capability to support nuclear energy using domestic resources.

The United States led the world's development of nuclear energy, but there hasn't been a new construction permit issued here after 1978 (Shearon Harris). That dearth of new plants was driven by several factors, but its impact has been enormous. Our nation's capacity for new plant construction has had limited exercise and has partially atrophied. We are no longer the world's only leader in these areas. Today we have enough of the infrastructure-both human capital and industrial capability-to recover, but we are in danger of losing these capabilities in the not too distant future.

You'll hear many talks at this conference about the potential rebirth of nuclear energy in the United States. There is no question that there is more enthusiasm for this rebirth than at any time in recent history. As I noted earlier, projections for new electricity supplies within the next 20 years show that new generation capacity is essential. A number of companies are now discussing possibilities for new nuclear plants.

You will probably also hear over the next few days that several areas of uncertainty must be addressed before new construction will occur. Regulatory uncertainty, a key concern of the NRC, is one of the factors that must be weighed as any utility considers new construction. I'd like to use the rest of my time today to discuss the roles of the Commission in ensuring safe and secure operations, as well as in providing regulatory certainty, into the future.

Of course, the performance of the NRC will not, of itself, create the climate for new construction. But failure of the NRC and the industry to ensure the safety and security of existing plants will immediately discourage talk of new plants. How will we accomplish these current goals and thereby provide the foundation for possible future growth?

First, the industry must maintain a clear focus on safe operations and assure no blemish on its stellar safety record - that no member of the public has ever been injured by any release from a civilian plant in the United States. With this focus, the industry under the watchful oversight of the NRC must constantly guard against another serious incident like that encountered at Davis-Besse. Many of you in this room will directly share in this responsibility to set an example of safety consciousness within your organizations and thereby earn public confidence in the safety of your plants.

Second, at the Commission, we need to observe and report on industry's continued safety performance, as we further risk-inform and performance-base our regulations and implement our oversight processes. In general, industry's safety trends have shown improvements over the last decade.

The NRC revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants in 1999-2000. The new oversight process uses more objective, timely, and safety-significant criteria in assessing performance, while seeking to more effectively and efficiently regulate the industry. It also takes into account improvements in the performance of the nuclear industry over the past 20 years.

The objective is to monitor performance in three broad areas – **reactor safety** (avoiding accidents and reducing the consequences of accidents if they occur); **radiation safety** for both plant workers and the public during routine operations; and protection of the plant against sabotage or other **security** threats. To measure plant performance, the oversight process focuses on seven specific “cornerstones”, which support the safety of plant operations in the three broad performance areas. In addition to the cornerstones, the reactor oversight program features three “cross-cutting” areas, so named because they affect, and are therefore part of, each of the cornerstones.

The revised oversight process provides more information on plant performance than in the past, and the information is available on a more frequent basis. This information is placed on the NRC's Internet web site.

The public credibility of this assessment process rests both on each plant's full commitment to accurate and unbiased performance indicator data collection and reporting, and on the dedication and knowledge of NRC resident and regional inspectors. In this respect, both the industry and the NRC work toward maintaining public confidence in this process.

Third, security was a key focus of the NRC before 9/11 and has been substantially enhanced since those events. Some of the security enhancements are obvious as one approaches any plant perimeter such as this intrusion barrier. Many more changes are less obvious. They reflect improvements in internal operations, procedures, and physical arrangements. They also involve carefully negotiated and tested protocols between the NRC and local, state, and federal responders. Airborne threats are addressed through the operations of the Department of Homeland Security and the

North American Aerospace Defense Command (NORAD). With these many enhancements, our nuclear plants are even more secure today.

Fourth, in addition to public assurances on safety and security, nuclear power will not advance unless the industry and the public have confidence that the Commission's licensing procedures are well understood, incorporate significant public input, and operate on predictable time scales. The Commission's performance on license renewals, power uprates and new plant licenses will be measured in this process.

License renewals began with Calvert Cliffs in 2000, and now the Commission has renewed licenses at 32 plants. Renewal applications are currently pending for 16 plants. With few exceptions, the Commission has processed these renewals within about 22 months. However, where renewal applications are not of sufficient quality, the Commission has not hesitated to return or delay a licensee's application package – applications for 4 units have recently fallen into this category.

Power uprates have also been processed reliably by the Commission. Some of the larger uprate requests require very careful evaluation, especially in light of steam dryer damage in BWRs after significant uprates. This is currently an area of careful study at the Commission.

Licensing of the first new reactors will be a process watched carefully by all stakeholders, both public and industry. Here the Commission will use an untested new process described in our regulations. This framework was instituted in 1989 and provides for a combined construction and operating license or COL. The process also includes the Early Site Permit or ESP process and the Standard Design Certification. Both the ESP and the design certification may be referenced to simplify a utility's application for a COL. The overall goal of the COL process is to provide a more stable, efficient, and predictable regulatory framework for utilities that might wish to pursue a new reactor license. At the same time, the Commission has been careful to include appropriate opportunities for public input throughout the parts of the COL process.

The ESP process allows early resolution of site-related issues and effectively allows a utility to bank a site for future construction. Three applications have been received, for the North Anna, Clinton, and Grand Gulf sites, and the Commission is on track to issue final decisions in 2006 for these cases.

The first standard design certification was issued for the GE ABWR system in 1997. Today three advanced designs are certified, one certification review is in progress and out for public comment, and others are expected to be filed soon. The Commission has estimated times for completion of a certification to range from 42 to 60 months depending on the complexity of the design and its departure from previously certified designs.

The COL application process enables a utility to reference an ESP and a certified design to expedite the process. If both the ESP and certification are in hand, the review and hearing process for the combined license can be anticipated in less than 30 months. Nevertheless, the first utility that tests the COL procedure will be moving into uncharted waters, but into an area that the Commission has anticipated and is prepared to address.

In summary, the foundation for retaining the nuclear energy option in the future rests squarely on the continued safe nuclear plant performance of the current operating reactors and continued strong and independent NRC oversight. In addition, it depends on improved security, and stable NRC licensing processes with appropriate public input. Meeting these goals in as public a manner as possible, while balancing openness and information security, is absolutely necessary. Well-informed citizens are essential to better understanding operations, risks, and benefits involving the nuclear energy option.

While the industry has demonstrated a strong track record in recent years, it has not been without challenges and opportunities to learn. As an example, both the industry and the NRC staff must learn and institutionalize the important lessons from the Davis-Besse corrosion event - and not just the technical aspects, but more importantly avoiding the underlying complacency and failure to maintain a questioning attitude. Another challenge for both the industry and the NRC is the impending loss of many of our most experienced employees who are nearing retirement, and the attendant loss of the historical and collective lessons that they have learned. It isn't sufficient to just hope that these lessons will have been passed on to younger generations. We must all commit to actively mentoring our less experienced employees to pass on the important values that are essential to continued safe use of the nuclear energy option.

Overall, the industry's performance, as well as the Commission's regulatory oversight, will be carefully observed by the public. Only if both the industry and the Commission demonstrate strong performance can public confidence be maintained sufficient to permit an objective and reasoned public dialogue on the future of nuclear energy in this country.

As the newest Commissioner, I view it as my responsibility to help keep the Commission on the course navigated very well by Commissioners throughout the years, and most recently by the three senior Commissioners. In keeping with my admonitions for mentoring, I take it as a personal commitment to learn as much as I can from the more senior Commissioners. As I learn from them, my goal is to maintain and enhance the progress for which they have provided such valuable leadership in recent years.

Thank you once again, as I have thoroughly enjoyed the opportunity to speak with you today. I look forward to a dynamic and challenging tour as an NRC Commissioner, during which I hope that we can together make a positive contribution to our nation's future. Thank you.



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs

Telephone: 301/415-8200

Washington, D.C. 20555-0001 E-mail: opa@nrc.gov

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

No. S-05-009

Workforce Issues in the Nuclear Industry

Peter B. Lyons

Commissioner

Nuclear Regulatory Commission

Presented at:

ANS President's Special Session

Manpower for the Nuclear Industry – A Continuing Need

June 7, 2005

American Nuclear Society Annual Conference

The Next 50 years: Creating Opportunities

San Diego, California

June 5-9, 2005

When I spoke at the opening session yesterday, I listed human capital as one of the largest challenges facing the Commission. By this term, I mean the issues associated with industry-wide retirements outpacing incoming entry-level technical personnel, the transfer of knowledge from the very senior employees to those entry-level employees, the need for an expanded national workforce and increasing competition with other industries for qualified new graduates.

As I began my service with the Commission, this was one of the three major challenges that I identified – along with safety and security issues – for the future health, stability, and effectiveness of the Commission. From my experiences at Los Alamos and on Capitol Hill, I had already heard many concerns about this issue from federal agencies, academia, and industries utilizing nuclear technologies. As a Commissioner, I quickly learned that this concern for the NRC staff was not misplaced. Almost half of our current staff are 50 or older, and 36% of them are eligible to retire within the next 5 years.

A similar problem was identified by the Government Accountability Office when they recently studied the National Nuclear Security Administration's weapons facilities. They found that, of workers with a set of critical skills needed to maintain the weapons stockpile, about 37% are at or near retirement age.

The challenge of these figures is compounded by the fact that, with few exceptions, students do not graduate with the full range of knowledge and skills they need for full contributions to either the NRC or the NNSA. In many cases, years of training are required for an entry-level person to acquire the requisite skills.

Human capital in the nuclear arena is a subset of a much larger national issue. We should have serious concerns with the current state of our nation's workforce preparation for science and engineering in general. This issue was recently discussed in significant detail in a comprehensive report issued by the Task Force on the Future of American Innovation.

That report noted that the number of science and engineering positions in the U.S. workforce has grown since 1980 at almost 5 times the rate of the U.S. civilian workforce as a whole. But in contrast, the number of science and engineering degrees earned by U.S. citizens is growing at rate below the growth in the total U.S. civilian workforce. Further, our preparation of qualified science and engineering graduates is falling further behind other nations with each passing year.

One measure of this issue, collected in the compendium of Science and Engineering Indicators compiled by the National Science Board, is the ratio of first university science and engineering degrees to the population of 24 year-olds. In 1975, this ratio for the U.S. exceeded most of the surveyed nations, except Finland and Japan. By 2000, our ratio was exceeded by 16 nations, including again Finland and Japan, plus France, Taiwan, South Korea, UK, Sweden, Ireland, and Italy, to name a few.

To put this further into perspective, here this ratio has slowly increased over time. In the United States, it was 4.0 in 1975 and 5.7 in 2000. But the ratio in several countries showed dramatic growth, Finland advanced from 4.1 to 13.1 in the same time frame, and France went from 2 to 11.

Another perspective on this national issue arises from some enrollment statistics from our universities. While the foreign students in our science and engineering programs make tremendous contributions to our universities and enrich and broaden both our and their experiences, the fact remains that our universities have become more and more dependent on foreign student enrollment to sustain their programs in these vital areas.

Foreign students with temporary visas represent about half of all graduate students enrolled in U.S. universities in engineering, math, and computer science. And almost 70% of U.S. postdoctoral researchers in engineering and the physical sciences are foreign-born.

Universities in other countries have long overtaken our nation's production of students trained in science and engineering. In 2000, Asian universities produced 1.2 million such graduates, the Europeans produced 850 thousand. Our universities produced about 500 thousand.

Another point of concern for our universities is that about 30% of the faculty in science and engineering disciplines are 55 and older. The nation needs to be training a substantial number of new, highly qualified, candidates for these vital positions.

These statistics are all the more of concern when we remember that our nation no longer generates most of its wealth through manufacturing. The U.S. is simply not competitive for low-wage jobs. The strength of our economy depends on a stream of new, innovative, high technology products

and services that remain on the leading edge of available technologies. Without a suitably trained workforce, we will be less and less competitive in the global marketplace.

Turning from the broad perspective of high technology fields to nuclear technologies, the picture may be of even greater concern. Studies at the Oak Ridge Institute for Science and Education have shown alarming trends.

The number of programs to train students in nuclear technology fields has been falling. In 1975, there were 77 nuclear engineering programs in the country. In 2003, there were 33 as universities responded to reduced student interest. The number of university research reactors has fallen by about half since the mid-1980s.

The number of students attaining degrees in nuclear engineering, including B.S., M.S., and Ph.D. levels, was 448 in 2004. The lowest recent year was 345 in 2001, compared to the high point of 812 in 1995.

There are certainly some excellent and highly productive nuclear engineering programs. For example, Rensselaer Polytech Institute and Texas A&M lead the nation in bachelor level graduates, accounting for almost 25% of the nation's total. Similarly, MIT and the University of Michigan lead in Ph.D. graduates, with almost 30% of the nation's total. But the bad news is that too few other universities are producing graduates at levels rivaling these outstanding programs.

We simply are not convincing young people today that there is a challenging and exciting career awaiting their pursuit of this field. We need to be publicizing the fact that the Oak Ridge studies show that there are approximately two new job openings for every nuclear engineering graduate today.

Oak Ridge studies for health physicists also show similar trends. For this profession, "the number of job openings for new graduates will exceed the number of new graduates ... by more than 2 - 1 over the next ... four years."

In my limited time at the Commission, I've been very impressed with the range of staff development and recruiting programs that are underway within the NRC. The Commission has provided fellowships and scholarships, as well as a number of cooperative education programs.

We have strong participation in the Leadership Development Program, the Nuclear Safety Professional Development Program, and in the Senior Executive Service Candidate Development Program. With these programs, the Commission is meeting its current targets for staff recruitment. Legislation introduced by the U.S. Senate Environment and Public Works Committee would provide additional tools to develop and attract qualified new staff.

While recruiting goals of the NRC are being met today, it may be far more challenging in the future to do so. Factors such as retirements, optimism for a rebirth of construction of new nuclear plants, continuing cleanup of the legacy of past weapons work, and expanding applications of nuclear technologies in the medical fields will lead to immense competition for the small number of qualified students available.

I've noted that the Commission sponsors a wide range of programs to encourage new graduates in specialities appropriate to our needs. But the issues of workforce development and human capital

are hardly unique to the Commission. I noted earlier that the entire industry faces severe shortfalls, and if a rebirth of new plant construction does occur, there will be increased needs and increased competition for the requisite new staff. Any new plant construction would inspire more students to view nuclear technologies as a secure, long-term career choice, but it's unlikely that the supply of new candidates can increase very quickly.

The challenge of workforce development is faced by every industry and every organization represented in this room, from academia to government and industry. For that reason, every one of your organizations should be actively helping to develop interest in nuclear technology careers with students, starting even before they are of college age.

All of us need to redouble our efforts in conveying to students the excitement and opportunities that await them in science and technology in general, and in nuclear technologies specifically. From today's scientists and engineers, to our universities, to all of our companies that depend on advanced technologies, and to our nation's elected leaders, the message of workforce development needs to be heard and acted upon.

IN RESPONSE, PLEASE
REFER TO: M050525B

June 30, 2005

MEMORANDUM TO: Luis A. Reyes
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary */RA/*

SUBJECT: STAFF REQUIREMENTS - BRIEFING ON RESULTS OF THE
AGENCY ACTION REVIEW MEETING (SECY-05-0070), 9:30
A.M., WEDNESDAY, MAY 25, 2005, COMMISSIONERS'
CONFERENCE ROOM, ONE WHITE FLINT NORTH,
ROCKVILLE, MARYLAND (OPEN TO PUBLIC ATTENDANCE)

The Commission was briefed by the NRC staff on the results of the Agency Action Review Meeting (AARM). In addition to efforts described in the Reactor Oversight Process (ROP) self-assessment, the staff should consider further improvements to performance indicators to give the NRC good indicators of performance in which to focus inspection resources. Further effort should be taken to clarify the guidance on substantive cross-cutting issues. The staff should continue to emphasize the importance of effective implementation of a good corrective action program as it participates in conferences, workshops, and meetings with licensees. The staff should ensure that the Mitigating System Performance Index (MSPI) process is as transparent as possible to external and internal stakeholders.

The staff should brief the Commissioners and/or their staffs as requested, on the inspection program for large irradiators, manufacturers and distributors, and other materials licensees possessing high-risk sources. For fuel facilities, after the staff's review of the integrated safety analyses are completed, the staff should engage stakeholders and evaluate the feasibility of developing facility-specific indicators of performance that could be of use in NRC's licensing and oversight process. The indicators should be objective, transparent, risk-informed and performance-based. The staff should update the Commission on the status of this effort at the next Materials Safety Commission meeting.

For future AARM cycles, the staff should plan to conduct a separate public Commission meeting that would be held in the afternoon, after the annual AARM Commission meeting. At this meeting, the fuel cycle and large materials licensees that were discussed during the morning AARM Commission meeting should present their plans for improving performance at their facilities.

cc: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield
Commissioner Jaczko
Commissioner Lyons
DOC
OGC
CFO
OCA
OIG
OPA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR

IN RESPONSE, PLEASE
REFER TO: M050602A

June 21, 2005

MEMORANDUM TO: Janice Dunn Lee, Director
Office of International Programs

Luis A. Reyes
Executive Director for Operations

FROM: Annette L. Vietti-Cook, Secretary */RA/*

SUBJECT: STAFF REQUIREMENTS - BRIEFING ON OFFICE OF
INTERNATIONAL PROGRAMS (OIP) PROGRAMS,
PERFORMANCE, AND PLANS, 9:30 A.M., THURSDAY, JUNE 2,
2005, COMMISSIONERS' CONFERENCE ROOM, ONE WHITE
FLINT NORTH, ROCKVILLE, MARYLAND (OPEN TO PUBLIC
ATTENDANCE)

The Commission was briefed by the staff on the Agency's international activities. The Commission is encouraged by the continued progress and improvements in this area. The staff should continue to focus on the following issues:

1. The staff should provide a summary report describing the status of G-8 country implementation of the IAEA Code of Conduct. The staff should provide periodic updates to the Commission.
(OIP) (SECY Suspense (Initial report): 7/22/05)
2. The staff should provide a plan to address anticipated work load increases that will result from implementation of the new 10 CFR Part 110 Rulemaking. The staff should provide a plan which addresses sources of funding for emergent work. The plan should clearly identify the anticipated workload, assumed labor rate (ex, hours per license review), and the required resources for the new work.
(EDO) (SECY Suspense: 6/30/05)

The Commission appreciates the staff's interest in gaining efficiencies in the export licensing process. The staff should submit a proposal for gaining further efficiencies in the export licensing process for Commission consideration.

3. The staff should complete development of a formal process to prioritize international activities. The process should include IAEA and NEA activities as well as factors such as demonstrated need of country receiving the assistance, benefit to the NRC, and funding availability. The process should include interaction with the Commission, where appropriate.
4. The staff should ensure that policy issues are brought to the Commission in the early

stages of preparing for international presentations and interactions.

5. The staff should review current memorandums of understanding (MOUs) with the Department of State and the Department of Energy, as they apply to international programs, to determine if updates or revisions are necessary.

cc: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield
Commissioner Jaczko
Commissioner Lyons
OGC
CFO
OCA
OIG
OPA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR

June 7, 2005

The Honorable Tom Davis, Chairman
Committee on Government Reform
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

On behalf of the U.S. Nuclear Regulatory Commission (NRC) and in accordance with 31 U.S.C. 720, I hereby submit our responses to the recommendations made by the U.S. Government Accountability Office (GAO) in its report entitled "Nuclear Regulatory Commission - NRC Needs to Do More to Ensure That Power Plants Are Effectively Controlling Spent Nuclear Fuel" (GAO-05-339). Specific responses to the GAO recommendations are provided in the enclosure.

If you have any questions or comments on our written statement, please contact me.

Sincerely,

IRA

Edward McGaffigan, Jr.
Acting Chairman

Enclosure:
NRC Responses to GAO Recommendations

cc: Representative Henry Waxman

NRC RESPONSE TO GAO RECOMMENDATIONS

In its report, "Nuclear Regulatory Commission: NRC Needs to Do More to Ensure That Power Plants Are Effectively Controlling Spent Nuclear Fuel" (GAO-05-339), the U.S. Government Accountability Office (GAO) made two recommendations to improve the effectiveness of nuclear reactor licensees' material control and accounting programs for spent nuclear fuel. These recommendations, and the U.S. Nuclear Regulatory Commission's (NRC's) responses to them, are provided below. The background information describes other ongoing material control and accounting (MC&A) actions taken by NRC in response to recent findings.

Background:

In late 2000, Northeast Nuclear Energy Company, then the licensee for Millstone Unit 1 (Connecticut), discovered that two irradiated fuel rods were missing. Northeast Utilities and the new licensee, Dominion Nuclear Connecticut, searched extensively and conducted a study of the root cause and possible scenarios leading to the failure to account for the rods throughout 2001, which NRC monitored and reviewed. The licensee did not find the rods and determined that they likely had been shipped in a burial cask to a licensed disposal site. The NRC enforcement action culminated on June 25, 2002, with NRC issuing a Severity Level II violation and a \$288,000 civil penalty to the licensee.

Further actions to determine if the MC&A problem identified at Millstone Unit 1 also existed at other plants were delayed because of the events of September 11, 2001, and the associated need to focus NRC resources on enhanced security matters. On November 26, 2003, the NRC issued Temporary Instruction (TI) 2515/154, "Spent Fuel Material Control and Accounting at Nuclear Power Plants," which directed NRC Regional Inspectors to inspect licensee programs for accounting for and controlling their spent fuel and also required a more extensive review of licensees' programs by qualified MC&A inspectors if individual fuel pins had been removed from assemblies or fuel had been reconstituted. The TI also required more detailed inspections at 12 sites.

During the conduct of the inspections, in early 2004, the NRC Resident Inspector at Vermont Yankee required the licensee to confirm visually that two pieces of irradiated fuel rods, which licensee records indicated were stored in a container in the spent fuel pool, were in their assigned locations. Retrieval of the container and visual examination revealed that the fuel pieces were not in their last known location. After an extensive 3-month search, the licensee found the two pieces in another location in the spent fuel pool. Possible NRC enforcement action is pending.

Also in early 2004, during preparation for dry storage, and with heightened MC&A awareness as a result of NRC inspection activities, the licensee for Humboldt Bay discovered that three pieces cut from a spent fuel rod in the mid-1970s could not be located. The search and investigation are ongoing. In this case, as in the other two cases, there is no reason to conclude that the pieces were ever in the public domain or posed a threat to the public.

It is important to note that for these cases of missing or unaccounted for fuel rods and pieces, the initiating events occurred decades ago. Loss of continuity for knowledge of the location of the pieces that were eventually found at Vermont Yankee occurred around 1980. The two

Enclosure

missing spent fuel rods at Millstone were first left off the spent fuel pool map in 1980. The pieces at Humboldt Bay date to the 1960s.

In June 2004, NRC issued Information Notice 2004-12, "Spent Fuel Rod Accountability," informing licensees about the Millstone and Vermont Yankee problems.

In February 2005, after analyzing results from the inspections conducted under TI 2515/154 and based on the experience gained from findings at Millstone Unit 1, Vermont Yankee, and Humboldt Bay, NRC issued Bulletin 2005-01, "Material Control and Accounting at Reactors and Wet Spent Fuel Storage Facilities." The Bulletin called for licensees to review and report information concerning their MC&A program. NRC is currently analyzing licensees' Bulletin responses in order to establish the priority for the additional more detailed inspections of MC&A programs under TI 2515/154. Based on the Bulletin response by the licensees and any findings from the additional NRC inspections, NRC will determine if further action is required on a plant-specific or generic basis.

Spent fuel is subject to multiple layers of protection, of which MC&A is one layer. Prior to September 11, 2001, spent fuel was protected by armed guards, physical barriers, intrusion detection systems, radiation detection systems, area surveillance systems, and access authorization requirements for employees working inside the plant. Since September 11, 2001, NRC has significantly modified its requirements, and licensees have significantly improved security at spent fuel facilities and nuclear power plants. NRC believes that the multiple measures associated with spent fuel provide adequate defense and that the public health and safety, the environment, and the common defense and security are adequately protected. In addition, we believe that heightened awareness brought about through the Information Notice, Bulletin, and NRC inspections under TI 2515/154 continue to strengthen MC&A programs.

Recommendation 1:

Establish specific requirements for the control and accounting of loose spent fuel rods and rod segments and nuclear reactor licensees' conduct of their physical inventories.

NRC Response:

As stated in NRC's comments on the draft GAO report (see final report, Appendix III), the NRC believes the regulations related to MC&A are clear and do not need revision. Under 10 CFR 74.19, each licensee is required to keep records of receipt, shipment, disposal, and inventory (including location) of all special nuclear material in its possession and to perform annual physical inventories of all special nuclear material. In this context, all special nuclear material includes irradiated nuclear fuel in all forms and includes rods and pieces. This regulation was the basis for the civil penalty assessed the licensee for the Millstone Unit 1 missing fuel rods incident.

The NRC agrees that licensees need more specific guidance in the control and accounting of rods and pieces and the conduct of physical inventory. The NRC plans to revise its guidance to clarify that the regulations apply to rods and pieces that have been separated from their parent assemblies. The NRC will revise the guidance documents for MC&A at nuclear power plants, including Regulatory Guide 5.29, "Nuclear Material Control Systems for Nuclear Power Plants" and Regulatory Guide 5.49, "Internal Transfers of Special Nuclear Material." Information and

experience gained from the additional inspections conducted under TI 2515/154 will form the basis for revising these documents. Following Commission review, the scope and schedule of any modifications to the guidance will be developed.

The NRC staff has also taken responsibility for leading an American National Standards Institute (ANSI) committee to revise its standard N15.8, "Nuclear Material Control Systems for Nuclear Power Plants." Experts from government and industry have been asked to review the existing standard and to propose changes designed to improve MC&A programs at nuclear power plants. The draft will be presented to the ANSI -15 Technical Standards Committee on Methods of Nuclear Material Control at the annual meeting of the Institute of Nuclear Materials Management in July 2005.

Information gathered from the inspection under the TI and responses to the Bulletin increased NRC understanding of the variety and extent of problems associated with MC&A, especially in relation to control of fuel rods and rod pieces. NRC expects to gather more information during conduct of additional, more detailed inspections, which can be used to improve the written regulatory guidance.

Recommendation 2:

Develop and implement appropriate inspection procedures to verify compliance and assess the effectiveness of licensees' material control and accounting programs for spent fuel.

NRC Response:

NRC agrees with the recommendation and is in the process of developing inspection procedures to assess the effectiveness of licensees' MC&A programs, including control and accounting of separated fuel rods and rod pieces. The NRC staff is preparing a revision of Inspection Procedure (IP) 85102, "MC&A - Reactors," and plans to finalize the procedure by the end of the second quarter of FY 2006. The revision will take into consideration the information from inspectors collected under of TI 2515/154 and other information reported by licensees in response to Bulletin 2005-01. Additional, more detailed inspections under the TI will be conducted in accordance with the TI instruction.

As stated above, NRC staff members are analyzing licensee responses to Bulletin 2005-01 as they are received and using the responses in conjunction with information collected during inspections conducted under the TI to establish priority for the additional 12 inspections of power reactor MC&A programs under the IT. The first of the more detailed inspections under the TI will be conducted during June 2005. Twelve inspections are scheduled to be conducted by November 26, 2005, the date established in the TI. Each inspection will be tailored to emphasize areas identified in the analysis of answers to TI questions and Bulletin responses. The NRC is reviewing long-term inspection requirements for ongoing oversight of licensees in this area. NRC will continue to evaluate and revise the MC&A inspection program at power reactors, as appropriate, as additional information indicates.

Identical letter sent to:

The Honorable Tom Davis, Chairman
Committee on Government Reform
United States House of Representatives
Washington, D.C. 20515
cc: Representative Henry Waxman

The Honorable Susan Collins, Chairman
Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510
cc: Senator Joseph I. Lieberman

The Honorable George V. Voinovich, Chairman
Subcommittee on Clean Air, Climate Change,
and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator Thomas Carper

The Honorable Ralph M. Hall, Chairman
Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Rick Boucher

The Honorable Joe Barton, Chairman
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative John D. Dingell

The Honorable James M. Inhofe, Chairman
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator James M. Jeffords

The Honorable David M. Walker
Comptroller General of the United States
Government Accountability Office
Washington, D.C. 20548

The Honorable Joshua B. Bolten, Director
Office of Management and Budget
Washington, D.C. 20503

effects of leaving DU munitions onsite that the Presiding Officer found to be germane.² After granting petitioner's request for a hearing, the Presiding Officer held the proceedings in abeyance until the staff could complete its technical review and issue an environmental assessment and Safety Evaluation Report on the possession-only license.

The NRC staff reported back to the Presiding Officer that it could not complete its technical and environmental reviews until it received additional information from the Army. In March, the staff informed the Presiding Officer that it was still not certain when the Licensee will furnish the necessary information.

The Presiding Officer brought this matter to our attention because the petitioner has waited over five years for a hearing on its environmental and safety concerns. This situation hinders public participation, leaves public safety issues unresolved, and thwarts this agency's goal of expeditious adjudication.

We, therefore, order the licensee to provide a report to the Commission by July 11, 2005, detailing its past and planned efforts to gather the information necessary for the staff to complete its technical and environmental reviews. Additionally, by July 20, the staff is ordered to provide a report to the Commission regarding the steps it plans to take to complete its reviews in light of the information provided by the licensee. We understand that on May 25, 2005, the applicant submitted to the staff in a publicly available submittal several hundred pages of new information related to this license.³ The staff regards the new information as a new license amendment request superseding the earlier application for a possession-only license. The staff should include a discussion of whether the applicant's recently submitted information will allow it to proceed with its evaluations related to this new license amendment application.

²LBP-04-1, 59 NRC 27 (2004).

³See ADAMS document Accession Number ML051520319.

Also in their filings, the licensee and the staff should describe the practical impacts on their respective activities in the event the staff approves or disapproves of the pending application. Petitioner is also invited to provide its views on all of these matters by July 30, 2005.

IT IS SO ORDERED.

For the Commission⁴

/RAI

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland
this 20th day of June, 2005

⁴ Commissioners McGaffigan and Lyons were not present for affirmation of this Memorandum and Order. Had they been present, they would have affirmed their prior votes.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED 06/20/05

COMMISSIONERS:

SERVED 06/20/05

Nils J. Diaz, Chairman
Edward McGaffigan, Jr.
Jeffrey S. Merrifield
Gregory B. Jaczko
Peter B. Lyons

In the Matter of)
)

DUKE ENERGY CORPORATION)
)

(Catawba Nuclear Station,)
Units 1 and 2))
_____)

Docket Nos. 50-413-OLA, 50-414-OLA

CLI-05-14

MEMORANDUM AND ORDER

I. BACKGROUND

This proceeding arises from Duke Energy Corporation's application for a license amendment to authorize the use of four lead test assemblies of mixed oxide (MOX) fuel in one of its Catawba nuclear reactors. On March 10, 2005, the Licensing Board issued its final partial initial decision (hereinafter "PID-Security")¹ on a security contention brought by the Blue Ridge Environmental Defense League ("BREDL"). BREDL's contention challenged certain exemptions Duke Energy Corporation sought for its Catawba facility during testing of MOX assemblies. Because the Board's decision contains protected safeguards information, the order has not been made public in its entirety. The Board did, however, issue a public notice of the decision, indicating that, *subject to certain conditions*, Duke had met its burden to show that

¹See *Duke Energy Corp. (Catawba Nuclear Station, Units 1 and 2)*, unpublished "Final Partial Initial Decision (Issues Relating to BREDL Security Contention 5)" (Mar. 10, 2005)

its requested exemptions from the requirements of 10 C.F.R. Parts 11 and 73 are appropriate and that its physical protection system will "provide high assurance that activities involving the MOX fuel will not be inimical to the common defense and security nor constitute an unreasonable risk to the public health and safety."² The Board later issued a public redacted version of PID-Security.³

PID-Security was the Board's final order in this case, and none of the parties sought review of it under 10 C.F.R. § 2.786(b).⁴ Nevertheless, pursuant to 10 C.F.R. § 2.786(a), the Commission decided to review the Board's order *sua sponte*.⁵ The Commission specifically requested the parties to brief the issue of the necessity of the conditions the Board imposed for purposes of receipt of the MOX lead test assemblies.⁶ The parties submitted their initial briefs on May 2, 2005, and their reply briefs on May 9, 2005.

In their initial briefs, Duke and the NRC Staff argued that none of the four license

²See "Notice of Final Partial Initial Decision (Issues Relating to BREDL Security Contention 5)" (Mar. 10, 2005). One day before the Board issued PID-Security, BREDL filed a petition for expedited discretionary review by the Commission of the NRC Staff's No Significant Hazards Consideration determination. The Staff had issued Duke's requested license amendment and regulatory exemptions on March 3, 2005. BREDL contended that the Staff's decision was unlawful because it was made before the Board issued a decision on BREDL's security contention. Under our rules, "No petition or other request for review of or hearing on the staff's significant hazards consideration determination will be entertained by the Commission. The staff's determination is final, subject only to the Commission's discretion, *on its own initiative*, to review the determination." 10 C.F. R. § 50.58(b)(6) (emphasis added). See *Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant)*, CLI-01-7, 53 NRC 113, 118 (2001). In any case, BREDL's motion became moot when the Board issued PID-Security on March 10, 2005.

³See LBP-05-10, 61 NRC __ (Apr. 18, 2005) ("PID-Public").

⁴ The Commission's new adjudicatory rules do not apply to this case, which began before their promulgation. See Final Rule: "Changes to Adjudicatory Process," 69 Fed. Reg. 2182 (Jan. 14, 2004). Hence, our references to our adjudicatory rules are to their former versions.

⁵See CLI-05-10, 61 NRC __ (Apr. 21, 2005).

⁶See *id.*

conditions the Board imposed was necessary. BREDL offered no substantive arguments about the conditions. Instead, BREDL insisted that the Commission's inquiry is moot; that the Commission's question is unreasonably and unfairly broad; and that the license conditions are appropriate to ensure that Duke's promises are fully enforceable.

Duke, in its reply brief, addressed the questions BREDL raised about mootness and the appropriateness of the Commission's *sua sponte* review. The NRC Staff replied to Duke's initial brief only to point out one topic the Staff considered beyond the Commission's request for briefs, and declined to reply to BREDL's initial brief. BREDL's reply brief sought to defend the conditions the Board imposed.⁷

II. DISCUSSION

Duke has already complied with the license conditions set by the Board. Duke's compliance may well render this matter moot, as BREDL claims, but it does not preclude the Commission from reviewing the conditions. Under both NRC rules and longstanding agency precedent, the Commission has the authority to review interlocutory and final Licensing Board decisions on its own motion.⁸ The Commission's practice is to address novel legal or policy

⁷On May 6, 2005, BREDL filed a motion to exceed the page limitation the Commission set in CLI-05-10 for the parties' reply briefs. Rather than presenting its main argument in the initial brief, BREDL has attempted to justify the Board's conditions belatedly in its reply brief. The Commission disapproves this tactic, which deprives Duke and the NRC Staff of an opportunity to reply directly to BREDL's substantive arguments about the license conditions. See *Louisiana Energy Services, L.P.*, CLI-04-25, 60 NRC 223, 225 (2004) ("new arguments may not be raised for the first time in a reply brief"); *Consumers Power Co. (Midland Plant, Units 1 and 2)*, ALAB-115, 6 AEC 257 (1973) (Petitioners failed to show why a document's contents could not have been furnished in a more timely fashion). Nevertheless, to ensure that we consider all perspectives, we do not reject BREDL's brief out of hand. We grant BREDL's motion and have considered the 14-page reply brief.

⁸ See, e.g., *Curators of the University of Missouri*, CLI-91-7, 33 NRC 295 (1991); *Public Serv. Co. of New Hampshire (Seabrook Station, Units 1 and 2)*, CLI-87-2, 25 NRC 267 (1987). See also 10 C.F.R. §2.786 (former rules). Under the Commission's new adjudicatory procedural rules, 10 C.F.R. § 2.341 provides for Commission *sua sponte* review.

issues and to provide appropriate guidance.⁹ The Commission will do so even in moot cases if necessary to clarify important issues for the future. The Commission is not subject to the constitutional "case or controversy" requirement that prevents federal courts from deciding moot questions.¹⁰

As is clear from the record in this proceeding, the issue in this case is not whether Catawba must counter the design basis threat (DBT) outlined in 10 C.F.R. § 73.1. As Duke explained in its brief before the Commission, as a Part 50 licensed reactor, Catawba unquestionably is required to protect against the "radiological sabotage" DBT defined in 10 C.F.R. § 73.1(a)(1).¹¹ Additionally, as Duke also recognized, "[t]here is no argument that for the period of time from receipt until the MOX fuel lead assemblies are irradiated, the DBT in 10 C.F.R. § 73.1(a)(2) for theft will apply."¹² In fact it is precisely because Duke would be required to meet various regulatory provisions in support of the "theft" DBT that the licensee found it necessary to request exemptions from some of these requirements. Therefore, the precise issue in this case was not whether the DBT applied, but whether or not the evidence

⁹See *Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 20, 23, 25 (1998).

¹⁰See *Texas Utilities Generating Co. (Comanche Peak Steam Electric Station, Units 1 and 2)*, ALAB-714, 17 NRC 86, 93 (1983), *citing Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2)*, ALAB-455, 7 NRC 41, 54 (1978), *remanded on other grounds sub nom. Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). We ordinarily do not decide moot questions – see, e.g., *Advanced Medical Systems, Inc.*, CLI-93-8, 37 NRC 181, 184-85 (1993) – but we do so here to avoid any implication that we approve the Board-imposed security conditions in this case.

¹¹See "Duke Energy Corporation's Brief on Review of the Licensing Board's Final Order Addressing Security Contention 5", May 2, 2005, pg. 7 [Brief is Designated as Safeguards Information].

¹² *Id.* at 8.

established that the regulatory standard for authorizing exemptions was satisfied.¹³ That standard provides that an exemption may be granted if it is "authorized by law and will not endanger life or property or the common defense and security, and [is] otherwise in the public interest."¹⁴ Based on our review of the record, the Commission believes that the Board accorded insufficient weight to the compelling arguments presented by Duke and the NRC staff detailing why the granting of the requested exemptions met this regulatory standard and would not endanger life or property or the common defense and security.¹⁵

It appears that, in large part, the Board was unpersuaded by the NRC staff's and Duke's arguments regarding the assurances provided in the wake of the exemption requests because the Board determined that the MOX fuel material could be an attractive target for terrorists.¹⁶ We have some difficulty with this attractiveness determination. First, we find the Board's generalized assumptions about the relatively strong attractiveness of the MOX fuel as a target in contradiction to the weight of the evidence established in the record demonstrating otherwise.¹⁷

Second, the central issue in this case is not whether there would be any interest in stealing the material – our regulations assume there is – but whether, as our exemption rule requires, the licensee presented sufficient evidence to support the assurance of the protection of public health and safety in light of the theft risk. Based upon our review of the record, the

¹³ See CLI-04-6, 59 NRC 62, 72 (2004); CLI-04-19, 60 NRC 5, 8, 10-11 (2004).

¹⁴ 10 C.F.R. § 73.5.

¹⁵ See *id.*

¹⁶ See "Final Partial Initial Decision (Issues Relating to BREDL Security Contention 5) at 19-24, 35-38, 72 [Decision is designated Safeguards Information].

¹⁷ See Hearing Transcript at 7-8, 3884-3885, 3976-3977, 5112-5147, 5273-5275, 4260-4263; Staff Findings at 21-25. [Transcript and Findings are designated Safeguards Information].

licensee and staff did just that by demonstrating, for example, that the licensee's security measures and forces could thwart either of BREDL's two formulated attack scenarios. The Board did not need to go further and offer its own interpretation of our DBT regulations.

Therefore, we find the additional security conditions imposed by the Board unnecessary to ensure compliance with the exemption standard. As our order today is public, we do not discuss in detail the Board-imposed security conditions. It suffices to say that we view the conditions as unnecessary to support the requested exemptions. In future cases, any legal questions about the interpretation of the DBT regulatory requirements which arise in the course of considering the admission of contentions or later in the adjudication should be referred to the Commission for appropriate guidance in lieu of needless speculation and misinterpretation.¹⁸

III. CONCLUSION

For the reasons above, we disapprove the four license conditions imposed by the Board in its March 10 PID-Security decision.

¹⁸See 10 C.F.R. §§ 2.718(g) and 2.730(f) under the regulations applicable to the present case, and, see 10 C.F.R. §§ 2.319(l) and 2.323(f) for future cases operating under the revised provisions of Part 2. The Commission encourages Boards and presiding officers to certify novel legal or policy questions early in a proceeding. See *Statement of Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 23 (1998).

IT IS SO ORDERED.

For the Commission¹⁹

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 20th day of June 2005

¹⁹ Commissioners McGaffigan and Lyons were not present for affirmation of this Memorandum and Order. Had they been present, they would have affirmed their prior votes.


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EA-05-037 - Palo Verde (Arizona Public Service Company)

June 27, 2005

EA-05-037

Gregg R. Overbeck, Senior Vice
President, Nuclear
Arizona Public Service Company
P.O. Box 52034
Phoenix, AZ 85072-2034

SUBJECT: NOTICE OF VIOLATION (NRC INSPECTION REPORT 05000528/2005011, 05000529/2005011, AND 05000530/2005011)

Dear Mr. Overbeck:

This refers to the inspection of Palo Verde Nuclear Generating Station (Palo Verde) emergency plan changes, the results of which were documented in Palo Verde inspection report 2005-011 issued on April 5, 2005. On March 4, 2005, the results of the inspection were discussed with members of your staff during an exit meeting at the Palo Verde facility. We informed Arizona Public Service (APS) at that time that we had identified an apparent violation of NRC requirements for which escalated enforcement action was being considered.

The apparent violation involved making a change to the Palo Verde emergency plan which appeared to have decreased the plan's effectiveness. Specifically, certain emergency action level (EAL) definitions that relied on field radiation survey results were modified in a way that made them technically inaccurate and unable to be implemented as written. NRC regulations in 10 CFR 50.54(q) permit a licensee to make emergency plan changes without NRC approval only if the changes do not decrease the effectiveness of the plan.

In the letter transmitting the inspection report, we provided APS an opportunity to address the apparent violation at a predecisional enforcement conference or in a written response before NRC made a final enforcement decision. APS requested an opportunity for a conference, and on June 1, 2005, a predecisional enforcement conference was conducted in the NRC's Region IV office with members of the Palo Verde staff to discuss APS's position on the apparent violation, its significance, its root cause, and any corrective actions taken or planned.

At the conference, APS admitted the violation, and attributed it, in part, to inadequate radiation protection expertise in the emergency planning department, a failure to subject the plan change to cross-organizational reviews, and a failure to provide appropriate training when responsibilities for emergency plan changes were transferred from one organization to another. APS acknowledged that the resulting conflict in procedural guidance (i.e., the EAL changes were not consistent with existing implementing procedures) could delay classification of an emergency or result in an event being mis-classified. APS stated that the potential for these problems was minimal because the implementing procedures were still correct and because the training and knowledge of the radiation protection staff would overcome any confusion created by the dissonant EALs.

APS's corrective actions were particularly comprehensive; most noteworthy was the action APS took to probe beyond the specific violation to identify root causes which revealed program weaknesses in knowledge transfer and cross-organizational reviews of plan changes. At the conference, APS stated that it had taken the following actions: (1) revised the affected EALs to their previous definitions; (2) reviewed other emergency plan changes involving EALs made since 1994; (3) evaluated

changes made to the Palo Verde security, fire protection and quality assurance plans; (4) developed training and job qualification requirements for those making emergency plan changes; (5) assigned radiation protection and operations personnel to the emergency planning department; (6) coached emergency plan personnel in the need for rigor, attention to detail and questioning attitude; and (7) assigned a new emergency plan manager.

Based on the information developed during the inspection, and consideration of the information that APS provided during the conference, the NRC has determined that a violation of NRC requirements occurred. The violation is cited in the enclosed Notice of Violation (Notice) and involved violating the requirements of 10 CFR 50.54(q). Specifically, APS made an emergency plan change that decreased the plan's effectiveness, and did so without prior NRC approval. This violation was assessed in accordance with the NRC Enforcement Policy because making this plan change without NRC approval impacted the regulatory process.

While this violation did not result in any actual safety consequences, it created the potential for confusion caused by differences between EAL definitions and emergency plan implementing procedures. As APS acknowledged at the conference, this had the potential to delay classification or result in mis-classification of an emergency. Also, the violation was indicative of a larger problem in APS's review of emergency plan changes, as discovered during APS's root cause analysis following the identification of the violation.

Therefore, this violation has been categorized in accordance with the NRC Enforcement Policy at Severity Level III. In accordance with the Enforcement Policy, a base civil penalty in the amount of \$65,000 is considered for a Severity Level III violation. Because Palo Verde was not the subject of escalated enforcement action under the NRC Enforcement Policy in the 2 years preceding the identification of this issue,¹ the NRC considered whether credit was warranted for *Corrective Action* in accordance with the civil penalty assessment process in Section VI.C.2 of the Enforcement Policy. The NRC determined that corrective action credit was warranted because APS's corrective actions, described earlier, were prompt and comprehensive. Compliance was restored by revising the affected EALs to their previous definitions. This results in no civil penalty being assessed for this violation.

Therefore, in recognition of the corrective actions taken, and in accordance with the provisions of the NRC Enforcement Policy regarding treatment of prior escalated enforcement actions, I have been authorized, after consultation with the Director, Office of Enforcement, not to propose a civil penalty in this case. However, significant violations in the future could result in a civil penalty as there are now two examples of escalated enforcement action taken against APS since April 20

APS is required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing a response. The NRC will use this response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

APS's extent of condition review identified another violation involving an emergency plan change made without NRC approval and which reduced the effectiveness of the plan. Specifically, APS identified a change to an EAL definition involving core exit thermocouple temperature readings which APS concluded was a decrease in plan effectiveness. This violation would have warranted classification at Severity Level III. However, the NRC is exercising enforcement discretion, as provided for in section VII.B.4 of the NRC Enforcement Policy, and is electing not to consider enforcement action for this issue. Specifically, APS identified this violation as part of its corrective action for the violation identified by the NRC and took corrective action within a reasonable time following discovery, ultimately deciding to revise the EAL to its previous version. In addition, the violation appears to have resulted from similar weaknesses in the plan change process, and it would not substantially change the safety significance of the initial violation.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and APS's response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. The NRC also includes significant enforcement actions on its Web site at www.nrc.gov; select **What We Do, Enforcement**, then **Significant Enforcement Actions**.

Sincerely,

/RA/

Bruce S. Mallett

Regional Administrator

Doc ID: 50-528, 50-529, 50-530
Lic ID: NPF-41, NPF-51, NPF-74

Enclosure: Notice of Violation

cc w/Enclosure:

Steve Olea
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007

John Taylor
Public Service Company of New Mexico
2401 Aztec NE, MS Z110
Albuquerque, NM 87107-4224

Douglas K. Porter, Senior Counsel
Southern California Edison Company
Law Department, Generation Resources
P.O. Box 800
Rosemead, CA 91770

Thomas D. Champ
Southern California Edison Company
5000 Pacific Coast Hwy, Bldg. D1B
San Clemente, CA 92672

Chairman
Maricopa County Board of Supervisors
301 W. Jefferson, 10th Floor
Phoenix, AZ 85003

Robert Henry
Salt River Project
6504 East Thomas Road
Scottsdale, AZ 85251

Aubrey V. Godwin, Director
Arizona Radiation Regulatory Agency
4814 South 40 Street
Phoenix, AZ 85040

Brian Almon
Public Utility Commission
William B. Travis Building
P.O. Box 13326
1701 North Congress Avenue
Austin, TX 78701-3326

Craig K. Seaman, Director
Regulatory Affairs
Palo Verde Nuclear Generating Station
Mail Station 7636
P.O. Box 52034
Phoenix, AZ 85072-2034

Karen O'Regan
Environmental Program Manager
City of Phoenix
Office of Environmental Programs
200 West Washington Street
Phoenix, AZ 85003

Hector R. Puentes
Vice President, Power Generation
El Paso Electric Company
310 E. Palm Lane, Suite 310
Phoenix, AZ 85004

Jeffrey T. Weikert
Assistant General Counsel
El Paso Electric Company
Mail Location 167
123 W. Mills
El Paso, TX 79901

Jo Schumann
Los Angeles Department of Water & Power
Southern California Public Power Authority
P.O. Box 51111, Room 1255-C
Los Angeles, CA 90051-0100

NOTICE OF VIOLATION

Arizona Public Service Company
Palo Verde Nuclear Generating Station

Dockets: 50-528, 50-529, 50-530
Licenses: NPF-41, NPF-51, NPF-74
EA-05-037

During an NRC inspection conducted on September 29, 2004 to March 4, 2005, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR 50.54(q) states in part, "A licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in §50.47(b) and the requirements in appendix E of this part The nuclear power reactor licensee may make changes to these plans without Commission approval only if the changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of §50.47(b) and the requirements of appendix E to this part.

Contrary to the above, on September 29, 2004, and lasting until February 8, 2005, the licensee made a change to its emergency plan without prior Commission approval which decreased the plan's effectiveness. The licensee removed a classifiable condition from two emergency action level (EAL) definitions, which made the EALs technically inaccurate and unable to be implemented as written. For example, with respect to EAL 3-16, the licensee removed the condition, "Site Boundary dose rate > 100 mrem/hr Deep Dose Equivalent as measured with portable instrumentation," and replaced it with "Field survey result or valid dose assessment indicates > 100 mrem TEDE or > 500 mrem thyroid CDE at the Site Boundary" Similar revisions were made to EAL 3-19. The revised EALs could not be effectively implemented because field survey instruments cannot directly determine TEDE (Total Effective Dose Equivalent). This revision to the EALs decreased the effectiveness of the plans because it had the potential to create confusion and delay an emergency classification or result in mis-classifying an emergency classification.

This is a Severity Level III violation (Supplement VIII).

Pursuant to the provisions of 10 CFR 2.201, Arizona Public Service Company is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to the Regional Administrator, Region IV, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-05-037" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. The response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If APS contests this enforcement action, it should also provide a copy of the response, with the basis for its denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because APS's response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of the response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If APS requests withholding of such material, it must specifically identify the portions of your response that it seeks to have withheld and provide in detail the bases for its claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Dated this 27th day of June 2005

1. APC was issued a Severity Level III violation and \$50,000 civil penalty on April 8, 2005, for a 1992 violation of 10 CFR 50.71. However, that violation was reflective of performance more than a decade earlier, and the citation for it was not within the 2-year period preceding the identification of the emergency plan change issue.

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EA-04-174 - Vermont Yankee (Entergy Nuclear Operations, Inc.)

June 22, 2005

EA-04-174

Mr. Jay K. Thayer
Site Vice President
Entergy Nuclear Operations, Inc.
Vermont Yankee Nuclear Power Station
P.O. Box 0500
185 Old Ferry Road
Brattleboro, VT 05302-0500

**SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - NOTICE OF VIOLATION
(NRC Special Inspection Report No. 50-271/04-07)**

Dear Mr. Thayer:

This letter refers to the NRC special inspection conducted between April 22 - August 27, 2004, at the Vermont Yankee Nuclear Power Station, which reviewed the circumstances associated with a failure to account for two irradiated fuel rod pieces that were not in the location specified in the records. The special inspection was a follow-up to an earlier inspection conducted by the NRC in March 2004, during which the NRC inspectors identified that Entergy and its predecessor (Vermont Yankee Nuclear Power Corporation) did not perform an adequate accounting of the two fuel rod pieces, which were believed to be located inside two stainless steel pipes welded vertically within an uncovered 5-gallon stainless steel container on the bottom of the spent fuel pool. In response to this NRC finding, you used a borescope to look inside these two pipes, and discovered that the two pieces were, in fact, not in the container. As a result, you initiated an investigation, and on July 13, 2004, both pieces were found in a liner resting sideways on the top edge of a channel rack in a different location in the spent fuel pool.

The inspection report, which was sent to you on December 2, 2004, identified an apparent violation of 10 CFR 74.19 involving the failure to adequately account for special nuclear material (SNM). The results of the NRC special inspection, including the apparent violation, were discussed with you and other members of your staff on November 23, 2004. During the closeout discussion, we informed you that the apparent violation was being considered for escalated enforcement action. Subsequent to providing you with our inspection report, the staff communicated with the Commission and then concluded that the application of traditional enforcement was appropriate in this case, in part, based on the lack of a Significance Determination Process (SDP) specific to this circumstance.

In a telephone conversation on June 16, 2005, Mr. Brian Holian, NRC Region I, informed Mr. John McCann, Director, Nuclear Safety Assurance, that we believed that we had sufficient information to make our final enforcement decision regarding the apparent violation. However, Entergy was given the option to request a predecisional enforcement conference or to provide a written response. Mr. McCann informed the NRC that Entergy did not desire to attend a predecisional enforcement conference nor provide a written response.

After careful consideration of the information developed during our inspections, the NRC has determined that a violation of NRC requirements occurred. This violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in NRC inspection report 50-271/04-07. Specifically, between January 1980 and July 13, 2004, two irradiated fuel rod pieces were not in their proper location in the spent fuel pool as detailed in your inventory

records. In addition, during that time, you failed to ensure that either (1) the fuel rod pieces remained there; or (2) the records indicated the new location of the pieces after they were moved. You also failed to conduct adequate inventories of the location of the two fuel pieces.

The finding did not have any actual safety consequences since the fuel rod pieces remained in the spent fuel pool the entire time that the violation existed. Nonetheless, the two spent fuel rod pieces were misplaced in the spent fuel pool for over 24 years without being identified during any of the periodic inventories. As a result, the possibility of these irradiated fuel pieces being mixed with other irradiated components and shipped offsite to a burial site was increased. As such, the staff considers this to be a significant failure of your material control and accounting (MC&A) program designed to prevent or detect the theft, loss or diversion of strategic SNM. Therefore, the NRC has concluded that this violation should be characterized as a Severity Level III violation in accordance with the NRC Enforcement Policy.

In accordance with the Enforcement Policy, a base civil penalty in the amount of \$60,000 (the amount in effect at the time of discovery) is considered for a Severity Level III violation. Because your facility has not been the subject of any Severity Level I, II or III violations within the last 2 years, the NRC considered whether credit was warranted for *Corrective Action* in accordance with the civil penalty assessment process in Section VI.C.2 of the Enforcement Policy. The NRC determined that credit for *Corrective Action* is warranted. Your investigation for the missing fuel rod pieces, and your physical inspection process of the VY spent fuel pool was thorough and complete, and your root cause analysis was acceptable. You also took appropriate actions to correct the violation and prevent recurrence. Your primary corrective actions included: (1) updating and verifying that the records were accurate for the two fuel pieces; (2) performing a complete physical inventory of all SNM at Vermont Yankee; (3) conducting an Entergy Corporate assessment of the Vermont Yankee MC&A process; (4) revising the Vermont Yankee MC&A procedure; (5) establishing a multi-disciplined team to evaluate and recommend future improvements to Vermont Yankee's MC&A process; and (6) strengthening your Quality Assurance oversight and assessment of Vermont Yankee's MC&A process.

Based on the above, application of the normal civil penalty assessment process under traditional enforcement would not result in issuance of a civil penalty. The NRC did consider whether to exercise discretion and impose a civil penalty in this case given the length of time that the violation existed. However, since the two fuel rod pieces never left the spent fuel pool, the NRC has decided not to exercise discretion to propose a civil penalty in this case. However, similar violations in the future could result in a civil penalty.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved is adequately addressed in the referenced inspection report. Therefore, you are not required to respond to the violation documented in the enclosed Notice unless the description herein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. The NRC also includes significant enforcement actions on its Web site at www.nrc.gov; select **What We Do, Enforcement**, then **Significant Enforcement Actions**.

Sincerely,

/RA/

Samuel J. Collins
Regional Administrator

Doc No. 50-271
License Number: DPR-28

Enclosure: Notice of Violation

cc w/encl:

G. J. Taylor, Chief Executive Officer, Entergy Operations
 M. R. Kansler, President, Entergy Nuclear Operations, Inc.
 J. T. Herron, Senior Vice President and Chief Operating Officer
 O. Limpas, Vice President, Engineering
 C. Schwarz, Vice President, Operations Support
 J. M. DeVincentis, Manager, Licensing, Vermont Yankee Nuclear Power Station
 Operating Experience Coordinator - Vermont Yankee Nuclear Power Station
 J. F. McCann, Director, Nuclear Safety Assurance
 M. J. Colomb, Director of Oversight, Entergy Nuclear Operations, Inc.
 J. M. Fulton, Assistant General Counsel, Entergy Nuclear Operations, Inc.
 S. Lousteau, Treasury Department, Entergy Services, Inc.
 Administrator, Bureau of Radiological Health, State of New Hampshire
 Chief, Safety Unit, Office of the Attorney General, Commonwealth of Mass.
 J. E. Silberg, Pillsbury, Winthrop, Shaw, Pittman LLP
 G. D. Bisbee, Esquire, Deputy Attorney General, Environmental Protection Bureau
 J. Block, Esquire
 J. P. Matteau, Executive Director, Windham Regional Commission
 M. Daley, New England Coalition on Nuclear Pollution, Inc. (NECNP)
 D. Katz, Citizens Awareness Network (CAN)
 R. Shadis, New England Coalition Staff
 G. Sachs, President/Staff Person, c/o Stopthesale
 J. Sniezek, PWR SRC Consultant
 R. Toole, PWR SRC Consultant
 Commonwealth of Massachusetts, SLO Designee
 State of New Hampshire, SLO Designee
 State of Vermont, SLO Designee

NOTICE OF VIOLATION

Entergy Nuclear Operations, Inc.
 Vermont Yankee Nuclear Power Station

Docket No. 50-271
 License No. DPR-28
 EA-04-174

During an NRC inspection conducted between April 22, 2004 - August 27, 2004, the results of which were discussed with the licensee on November 23, 2004, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR 74.19 (a)(1), (b), and (c) [formerly 10 CFR 70.51 (b), (c) and (d)], require in part, that each licensee shall keep records showing the inventory (including location and unique identity) of all special nuclear material (SNM) in its possession regardless of origin or method of acquisition; each licensee who is authorized to possess at any one time SNM in a quantity exceeding one effective kilogram of SNM shall establish, maintain, and follow written material control and accounting procedures that are sufficient to enable the licensee to account for all SNM in its possession under license; and each licensee who is authorized to possess at any one time and location SNM in a quantity totaling more than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof, shall conduct a physical inventory of all SNM in its possession under license at intervals not to exceed 12 months.

Contrary to the above, beginning in January 1980 and continuing until July 13, 2004, Entergy and its predecessor, who were authorized to possess SNM in excess of the quantities stated above, failed to:

1. keep adequate records showing the inventory (including location and unique identity) of all SNM in its possession. Specifically, records were in error because two irradiated fuel rod pieces (a 9" piece of rod from position D2 in assembly LJ3949 and a 17" piece of rod from position D2 in assembly LJ3915) were not in the location specified in the records. Specifically, the pieces were thought to be located in a special container stored on the bottom of the spent fuel pool, but were later found in a liner resting sideways on the top edge of a channel rack;

2. follow its material control and accountability procedure to account for all SNM in its possession. Specifically, most likely in January 1980, the instructions in procedure OP0400, "Special Nuclear Material Inventory and Accountability" were not completed to record the transfer of the two irradiated fuel rod pieces from a container on the bottom of the spent fuel pool to a liner in the spent fuel pool; and
3. conduct adequate periodic physical inventories of all special nuclear material in its possession. Specifically, physical inventories did not identify that two irradiated fuel rod pieces were not in the location described in the inventory records.

This is a Severity Level III violation (Supplement III)

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved are already adequately addressed on the docket in the letter transmitting this Notice, as well as in NRC Special Inspection Report No. 50-271/04-07, dated December 2, 2004. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation; EA-04-174," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555, with a copy to the Regional Administrator, Region I, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Dated this 22nd day of June 2005

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Last revised Thursday, June 23, 2005

DESCRIPTION OF CIRCUMSTANCES

Seabrook, a four loop Westinghouse PWR, has taken the initiative to develop an all-modes probabilistic safety assessment model. Following issues identified during a recent refueling outage, the risk associated with early midloop draindown and shutdown operations over a seven day period was determined to be roughly equivalent to operating at full power for an entire year. The instantaneous risk associated with draining the vessel to mid-loop exceeded 1.0×10^{-3} core damage frequency per year. This high instantaneous risk was discussed in other NRC and industry studies, including the EPRI report, "Low Power and Shutdown Risk Assessment Benchmarking Study," dated December 2002. The Seabrook analysis provides a relatively recent comparison of reactor risk.

During recent refueling outages, several work activities were conducted without appropriate planning, resulting in challenges to operators and to the decay heat removal system. In each case, operators responded appropriately and anomalous plant conditions were returned to normal. However, continued attention is needed for work planning and execution during these high-risk periods.

- At Point Beach Unit 1, the licensee authorized installation of the hot leg nozzle dams prior to establishing an adequate reactor coolant system (RCS) vent path. The plant was in midloop operations and the outage schedule had called for the pressurizer manway to be removed to establish an RCS vent path before installation of the hot leg nozzle dams. Due to unanticipated delays in removing the pressurizer manway, several licensed and experienced personnel (including the shift outage manager, the outage control center operations representative, the work control center supervisor, and the shift manager on shift at the time) decided to begin installing the hot leg nozzle dams before removing the manway. Fortuitously, problems delayed the installation of the hot leg nozzle dams. The nozzle dams were not completely installed before the personnel realized that installation of the hot leg nozzle dams without a RCS vent path would have had a significant adverse impact on safety. Without an adequate vent path, the RCS would become pressurized following a loss of shutdown cooling. If one of the cold leg nozzle dams became dislodged, RCS inventory would quickly be discharged from the vessel and the core could be uncovered within a very short time.
- During a Millstone Unit 2 refueling outage, shutdown cooling was temporarily lost when the shutdown cooling heat exchanger outlet valve inadvertently closed and the heat exchanger bypass valve opened. The valves changed position due to an instrument bus power failure caused by an error in the procedure to synchronize the power supplies to the instrument bus. Shutdown cooling was lost for 13 minutes and the RCS temperature increased by approximately 14 degrees F. An Unusual Event was declared for an uncontrolled heatup of the RCS greater than 10 degrees F. The risk significance of this event was mitigated because operators had not completed preparations to drain the reactor vessel to midloop operations. During previous outages this maintenance activity had been performed with the power to shutdown cooling valves secured, and later in the outage when decay heat was lower.

- Calvert Cliffs Unit 1 had a partial loss of shutdown cooling during midloop operations. Both component cooling water (CCW) heat exchangers were in service at the time of the event. Salt water cooling flow to one CCW heat exchanger was lost when the heat exchanger outlet valve failed closed. The valve closure was caused by the loss of power to the valve controller when a control room maintenance activity inadvertently grounded which resulted in the loss of power to an instrument bus and valve controller. The maintenance activity that resulted in the grounded instrument bus should not have been performed during midloop operations. Decay heat removal from one of the two operating component cooling water heat exchangers, which were cooling two shutdown cooling trains, was lost for 18 minutes resulting in an RCS heatup of 2 degrees F.
- During a Peach Bottom Unit 3 refueling outage, an unexpected decrease in reactor vessel water level of approximately 42 inches (from +200 inches to +158 inches) occurred over 4.5 minutes. Over 27 feet of water still remained above the top of active fuel. This event occurred during a flush activity of the Unit 3 residual heat removal (RHR) crosstie piping. The procedural controls for the flush activity did not contain instructions to isolate the "B" train of RHR during the flush activity. This resulted in an open flow path from the reactor vessel to the suppression pool. Additionally, shift management did not conduct a pre-job brief with all personnel involved in the flush. This event demonstrated the impact of adverse human performance on shutdown risk controls.

DISCUSSION

Planning, scheduling, and execution of work activities during outages can have a significant impact on overall plant risk. Refueling outages have become shorter, causing higher risk evolutions, such as midloop operations at PWRs, to be entered sooner after reactor shutdown. As a result there is reduced inventory in the reactor vessel at a time when the decay heat loads are high and the time to boil and uncover the core is relatively low. During these high risk evolutions, careful attention to work scheduling is necessary to ensure that decay heat removal cooling systems remain functional.

It is also important that work activities be scheduled to minimize distractions to operators and prevent unnecessary challenges to decay heat removal systems. Licensees need to continue to properly implement commitments made to previous generic communications on shutdown operations. Additionally, licensees need to continue to implement the controls specified by NUMARC 91-06 to properly manage shutdown risk.

CONTACTS

This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

/RA/
Patrick L. Hiland, Chief
Reactor Operations Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation

Technical Contacts:	Glenn T. Dentel, Region I (610) 337-1218 E-mail: gtd@nrc.gov	Stephen M. Schneider, Region I (610) 337-1211 E-mail: smc2@nrc.gov
	Mark A. Giles, Region I (610) 337-1202 E-mail: mag@nrc.gov	Paul G. Krohn, Region I (610) 337-5120 E-mail: pgk1@nrc.gov

NRR Project Manager: Richard Laura, NRR
(301) 415-1837
E-mail: ral1@nrc.gov

Note: NRC generic communications may be found on the NRC public website, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

June 1, 2005

NRC INFORMATION NOTICE 2005-15: THREE-UNIT TRIP AND LOSS OF OFFSITE
POWER AT PALO VERDE NUCLEAR
GENERATING STATION

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.

PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to electrical equipment failures and design deficiencies identified following recent transients at Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. As a result, the units lost offsite power, tripped, and experienced other problems, including the loss of an emergency diesel generator (EDG). It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

DESCRIPTION OF CIRCUMSTANCES

On June 14, 2004, at 7:41 a.m. Mountain Standard Time (MST), the 500 kV system upset at the PVNGS switchyard originated with a fault across a degraded insulator on a 230 kV transmission line. Protective relaying detected the fault and isolated the line from the remote substation. The protective relaying scheme at the other substation received a transfer trip signal actuating an auxiliary relay (Westinghouse Type AR) in the tripping scheme for two breakers connected to the faulted line. The AR relay had four output contacts, all of which were actuated by a single lever arm. The tripping scheme used two contacts in redundant trip coils for each breaker.

One breaker tripped, demonstrating that the AR relay coil picked up, and at least one of the AR relay contacts closed. The other breaker did not trip. Bench testing of the AR relay

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showed that, even with normal voltage applied to the coil, neither of the tripping contacts for the failed breaker closed. The breaker failure scheme for the failed breaker featured a design where the tripping contacts for the respective redundant trip coils also energized redundant breaker failure relays. Since the tripping contacts for the failed breaker apparently did not close, the breaker failure scheme was not activated, resulting in a persistent uncleared fault on the 230 kV line.

Various transmission system event recorders show that, during approximately the first 12 seconds after fault inception, several transmission lines on the interconnected 69 kV, 230 kV, 345 kV, and 500 kV systems tripped on overcurrent. Also during the first 12 seconds, three cogeneration plants tripped, two with combustion turbines and one with a steam turbine, and the fault alternated between a single-phase-to-ground fault and a two-phase-to-ground fault, apparently as a result of a failed shield wire bouncing on the faulted line. After 12 seconds, the fault became a three-phase-to-ground fault and additional 500 kV lines tripped.

Approximately 17 seconds after fault inception, the three transmission lines between the PVNGS switchyard and the nearby 500 kV substation tripped simultaneously due to the action of their negative sequence relaying, thereby isolating the fault from the several cogeneration plants connected to that substation. Approximately 24 seconds after fault inception, the last two 500 kV lines connected to the PVNGS switchyard tripped, isolating the PVNGS switchyard from the transmission system. At approximately 28 seconds after fault inception, the three PVNGS generators were isolated from the switchyard and, by approximately 38 seconds, all remaining lines feeding the fault had tripped and the fault was isolated.

The trips resulted in a total loss of nearly 5,500 megawatts electric of local electric generation. Because of the loss of offsite power (LOOP), a Notice of Unusual Event was declared for all three Palo Verde units at approximately 7:50 a.m. MST. The Unit 2 train A emergency diesel generator started but failed early in the load sequence process due to a diode which short-circuited. The subject diode had less than 70 hours of run time in the exciter rectifier circuit. As a result, the train A engineered safeguards features busses deenergized, limiting the availability of certain safety equipment for operators. Because of this failure, the emergency declaration for Unit 2 was elevated to an Alert at 7:54 a.m. MST. All three units were safely shut down and stabilized under hot shutdown conditions. Units 1, 2, and 3 were without offsite power for approximately 4 hours and 9 minutes, 1 hour and 46 minutes, and 2 hours 15 minutes, respectively.

DISCUSSION

External fouling on a 230 kV insulator resulted in the deenergizing of a 500 kV switchyard, removing all sources of power to three nuclear units. The single-failure susceptibility of a transmission line protective system was the primary cause of the cascading blackout.

The insulator degradation was caused by external fouling and did not, by itself, represent a concern about the reliability of the insulators on the 230 kV transmission system. Nevertheless, the failed AR relay and the lack of a robust tripping scheme raised concerns about the maintenance, testing, and design of 230 kV system protective relaying. The 230 kV substation where the relay failure occurred was subject to annual maintenance and testing. Following the event, the failed AR relay was visually inspected. No apparent signs of contamination or deterioration were found.

As noted earlier, the tripping scheme lacked redundancy that could have prevented the failure of the protective scheme to clear the fault. The review of the design of the substations connected to the PVNGS switchyard indicated that two transmission lines at the subject substation featured a tripping scheme with only one AR relay. The newer lines had two AR relays. However, the review found that the bus-sectioning breakers at the subject substation contained only one trip coil instead of two trip coils.

To improve reliability, the tripping schemes for the two identified lines were modified to have two AR relays energizing separate trip coils for each breaker. The utility is considering installation of two trip coils in all single-trip-coil breakers. The tielines that connected 500 kV and 230 kV switchyards did not have overcurrent or ground fault protection. The installation of overcurrent protection for these tielines were completed in a later modification.

The apparent failure of the Unit 2 train A EDG was a failed diode in phase B of the voltage regulator exciter circuit. The diode failure resulted in a reduced excitation current and the current was unable to maintain the voltage output with the applied loads. The failed EDG did not have a significant impact on plant stabilization and recovery, but it did result in limited availability of certain safety equipment during a design basis event.

Refer to Attachment 1 for additional discussion.

CONTACTS

This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contact(s) listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

/RA/

Patrick L. Hiland, Chief
Reactor Operations Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation

Technical Contacts: Amar N. Pal, NRR
301-415-2760
E-mail: anp@nrc.gov

Thomas Koshy, NRR
301-415-1176
E-mail: txk@nrc.gov

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

Attachment (exempt from public disclosure in accordance with 10 CFR 2.390)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

June 1, 2005

NRC INFORMATION NOTICE 2005-14: FIRE PROTECTION FINDINGS ON LOSS OF
SEAL COOLING TO WESTINGHOUSE
REACTOR COOLANT PUMPS

ADDRESSEES

All holders of operating licenses for pressurized water reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

PURPOSE

The U.S. Nuclear Regulatory Commission is issuing this information notice (IN) to inform addressees about recent inspection findings on post-fire procedural requirements related to loss of cooling to reactor coolant pump (RCP) seals. NRC anticipates that recipients will review the information for applicability to their facilities and consider taking actions, as appropriate, to avoid similar issues. However, no specific action or written response is required.

BACKGROUND

Assuming a fire results in loss of cooling to the RCP seals, licensees may comply with 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," by protecting the cooling to the seals or by demonstrating that the plant can cope with RCP seal leakoff flow rates. Many licensees have installed RCP seal packages using high-temperature O-rings that will not result in uncontrolled leakage from RCP seals for conditions with loss of all RCP seal cooling. Licensees also ensure adequate makeup capability to compensate for any RCP seal leakoff and maintain reactor coolant system (RCS) inventory according to requirements of Appendix R, Sections III.G.2, III.G.3, and III.L.1 and performance goals of Appendix R, Section III.L.2. Note that a plant licensed before January 1, 1979, must meet the provisions of Appendix R, Section III.G and III.L and a plant licensed after January 1, 1979, must implement the fire protection provisions of its operating license.

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DESCRIPTION OF CIRCUMSTANCES

At Surry, NRC inspectors found that certain postulated fires could result in the loss of cooling to the RCP seals. The inspectors noted that the RCP seal vendor, Westinghouse, advised that increased seal leakage, to around 21 gpm, could occur if seal cooling is lost and not restored before hot RCS fluid reaches the RCP seals. Additionally, the Westinghouse Owners Group (WOG) revised their generic emergency response guidelines for the station blackout event to recommend that RCP seal cooling not be restored following a prolonged loss of seal cooling in which the seal temperature exceeds the RCP seal vendor's recommendations. The licensee incorporated this guidance into its emergency operating procedures for the response to a loss of all alternating current (AC) power event but not in its procedures for safe shutdown of the reactor after a fire. Restoration of seal injection after the seals become hot could lead to increased leakage beyond the RCS makeup capability needed to satisfy the performance goals in Appendix R, Section III.L.2 (NRC Inspection Reports 50-280/03-07 and 50-281/03-07).

Similar findings were made at other nuclear power plants. At Turkey Point, NRC inspectors found that the post-fire procedures did not provide timely operator action to restore seal injection and could result in increased RCP seal leakage beyond the capacity of equipment dedicated to achieve and maintain post-fire safe shutdown according to Appendix R, Section III.G.2 (NRC Inspection Reports 50-250/04-07 and 50-251/04-07). At North Anna, NRC inspectors found, similar to the Surry finding, that certain fires could result in a loss of seal cooling. Seal cooling could be restored after the seal had heated up, thereby potentially resulting in increased seal leakage beyond the RCS makeup capability required to satisfy Appendix R, Section III.L.2 (NRC Inspection Reports 50-338/03-06 and 50-339/03-06). At Summer, the inspectors were concerned that the licensee's fire emergency procedure did not direct personnel to reestablish seal cooling flow in a timely manner, potentially leading to increased seal leakage beyond the RCS makeup capability needed to satisfy Appendix R, Section III.L.2 (NRC Inspection Report 50-395/01-10).

DISCUSSION

The NRC uses "deterministic" information to determine the existence of performance deficiencies. The risk significance of an identified performance deficiency is evaluated using probabilistic risk assessment (PRA) models.

In each case cited above, the NRC inspectors attributed the performance deficiency to inconsistent recovery procedures. They observed that the plant emergency procedures for a loss of all AC power did not agree with the plant procedures for mitigating the effects of a postulated fire. The post-fire procedures failed to direct plant personnel to restore RCP seal cooling before the seal temperature exceeds the vendor-specified limit. The inspection findings from Turkey Point also indicate that the fire mitigation procedures fail to consider that restoration of seal cooling is a time-critical operator action.

For seal packages in general, the makeup capability must exceed the seal leakoff to ensure that a hot standby condition can be achieved (according to the requirements in Appendix R, Section III. L.1. (c) and that the pressurizer level is maintained in the indicating range (according to the performance goals in Appendix R, Section III L.2.b). Furthermore, protecting seal integrity would be assisted if procedures for operating equipment needed for post-fire shutdown are consistent with vendor recommendations. For the Westinghouse RCP seals, as discussed in a recently submitted document on RCP seal performance (Reference 3), a leakage rate of 21 gpm per RCP may be assumed in the licensee's safe shutdown assessment following the loss of all RCP seal cooling. Assumed leakage rates greater than 21 gpm are only warranted if increased seal leakage is postulated as a result of deviations from seal vendor recommendations. Test or operating experience may be used to justify other RCP seal leakage rates.

Licensees with Westinghouse RCP seals have developed fire emergency procedures to cope with a loss of all RCP seal cooling by either reestablishing seal cooling to the RCPs before increased seal leakage occurs (to prevent increased leakage) or by providing sufficient RCS makeup to achieve and maintain post-fire safe shutdown.

Performance deficiencies and violations of regulatory requirements can result from all of the following: (1) procedural deviations from the manufacturer's recommendations without a documented basis, (2) inadequate procedures, and (3) inadequate documented analysis to show that Appendix R, Section III.L requirements are met.

If a performance deficiency exists, it is evaluated in the significance determination process (SDP) using PRA models. The loss of RCP seal cooling has been extensively modeled in PRA applications. In particular, the NRC used PRA information from its closure of a generic safety issue involving RCP seal failure (Reference 1) and from its safety evaluation of an industry model of RCP seal leakage (Reference 2) as the SDP framework to evaluate the risk significance of certain fire protection inspection findings. In the Surry case, the NRC estimated that the increase in the core damage frequency was between $1E-6$ and $1E-5$ per year (a white inspection finding). This finding is highly dependent on the plant-specific electrical switchgear room arrangement and the fire mitigation strategy.

In the recently submitted document on RCP seal performance (Reference 3), the NRC has not found sufficient new information to improve PRA models from previously issued industry models (Reference 4) or safety evaluation reports (Reference 2).

The PRA modeling considers two cases. In case 1 (plants with Westinghouse high-temperature O-rings and seals), Westinghouse, the RCP seal vendor, states that after loss of seal cooling, the seals with high-temperature O-rings will leak at about 21 gpm per pump. If the licensee implements vendor guidelines, this condition is not expected to proceed to failures resulting in leak rates greater than 21 gpm per pump. Even if seal cooling is not reestablished, degradation of the seals for leakage rate to significantly increase is not expected for an

indefinite period of time if the RCPs are secured before the seal temperature exceeds 235 degrees F. Restoration of seal cooling may result in cold thermal shock of the seal and possibly cause increased seal leakage. If seal cooling is restored using component cooling water (CCW) to the thermal barrier cooler, water hammer may occur and possibly compromise the integrity of the CCW system. As discussed in the recently submitted document on RCP seal performance (Reference 3), if the CCW system is damaged, then plant shutdown after a fire accident may not be possible in all scenarios.

To be consistent with 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," protection of seal integrity depends on fire protection and RCP recovery procedures being consistent with the manufacturer's recommendations and that the associated instrumentation, alarms, and recovery procedures are available after a fire.

In case 1 (plants with Westinghouse high-temperature O-rings and seals), the NRC PRA modeling accounts for two failure scenarios, given a loss of seal cooling with no RCPs operating. In failure scenario 1 (hot shock), during initial heating of the seals, hydraulic instability caused by fluid flashing can potentially open (pop) the second-stage seal faces (Reference 2). For this scenario, the NRC PRA model assumes that the popping failure of the second-stage seal occurs at 13 minutes after loss of RCP seal cooling.

In case 1, failure scenario 2 (cold shock), if RCP seal cooling is restored after the seal temperature exceeds the vendor-specified limit, given survival from the initial hot shock of the seals, the NRC uses seal failure probabilities and consequential seal leakage sizes similar to those used in failure scenario 1.

In case 2 of the NRC PRA model (Westinghouse plants with "old," pre-high-temperature RCP seals), Westinghouse, the RCP seal vendor, states that after loss of seal cooling, the "old" seals could fail after about 30 minutes. Therefore, protection of seal integrity requires the restoration of seal cooling within the appropriate time limit. However, this time limit is approximate. Plant-specific vendor guidance may differ based on (1) commitments made with respect to the station blackout analysis and (2) licensee-specific vendor recommendations.

CONTACT

This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contact(s) listed below or the appropriate NRR project manager.

/RA/

Patrick L. Hiland, Chief
Reactor Operations Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation

Technical Contacts: Phil Qualls, NRR Michael Franovich, NRR
301-415-1849 301-415-3361
E-mail: pmg@nrc.gov E-mail: mx1@nrc.gov

_____ Albert Wong, NMSS
301-415-7843
_____ E-mail: axw2@nrc.gov

Attachment: References

Note: NRC generic communications may be found on the NRC public Web site,
<http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

REFERENCES

1. NRC Regulatory Information Summary 2000-002, "Closure of Generic Safety Issue 23, Reactor Coolant Pump Seal Failure," February 15, 2000 (ADAMS ML003680402)
2. NRC Office of Nuclear Reactor Regulation, "Safety Evaluation of WCAP-15603, Revision 1, WOG 2000 Reactor Coolant Pump Seal Leakage Model for Westinghouse PWRs," Westinghouse Owners Group Project No. 694, May 2003 (ADAMS ML0314003760)
3. Westinghouse Owners Group, "Reactor Coolant Pump Seal Performance for Appendix R Assessments," WCAP-16396-NP, Revision 0, January 2005 (ADAMS ML050320187)
4. Westinghouse Electric Company, LLC, "WOG 2000 Reactor Coolant Pump Seal Leakage Model for Westinghouse PWRs," WCAP-15603, Revision 1, May 2002 (ADAMS ML021500485)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

June 6, 2005

NRC REGULATORY ISSUE SUMMARY 2005-08
ENDORSEMENT OF NUCLEAR ENERGY INSTITUTE (NEI) GUIDANCE
“RANGE OF PROTECTIVE ACTIONS FOR NUCLEAR POWER PLANT
INCIDENTS”

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.

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to endorse the Nuclear Energy Institute (NEI) guidance titled “Range of Protective Actions for Nuclear Power Plant Incidents, April 2005,” as an acceptable range of early-phase protective actions that licensees may use in the event of a nuclear power plant incident. This RIS requires no action or written response on the part of addressees.

BACKGROUND INFORMATION

Title 10 of the Code of Federal Regulations (CFR), Section 50.47(b)(10), requires, in part, that licensees develop a range of protective actions for the public in the plume exposure pathway emergency planning zone (EPZ). Also, 10 CFR 50.47(b)(10) requires that guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, be developed and in place.

Section III, “The Final Safety Analysis Report,” of Appendix E to 10 CFR Part 50 requires that plans for coping with emergencies contain information to provide assurance of coordination among the supporting groups and with the licensee. Therefore, changes to a licensee’s emergency plan related to protective actions should be coordinated with the offsite response organizations. In this context, “coordinated” means that the licensee has contacted offsite response organizations and informed them of the proposed change.

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2.3.1 Evacuation

Issue 1: Evacuation Decision Points

EPA 400 (Ref 3) utilizes dose limits as a decision point for evacuation. NUREG 0654 (Ref 2) uses plant conditions as a decision point for evacuation, stating that evacuation should take place when, "...Actual or projected severe core damage or loss of control of facility" exists, and advises the use of EPA PAG's to modify protective actions. Most licensees have interpreted the above guidance to mean: evacuate 2 miles around and five miles downwind at a General Emergency (actions based on plant conditions), then evacuate if EPA protective action guidelines are met (actions based on dose). This interpretation is consistent with the definition of a General Emergency (Ref 4 and 5) and the guidance in NUREG 0654 (Ref 2) that suggests consideration of EPA PAG's.

Coincident with evacuation, or where appropriate, the sheltering of the population, the remainder of the plume EPZ should be advised to go indoors and monitor EAS broadcasts. (Ref 2)

Industry position:

The minimum recommendation that shall be made at a General Emergency is to evacuate approximately 2 miles around and 5 miles downwind from the plant. Subsequent recommendations should be based on the EPA PAG's, changing plant conditions, field data or changes in meteorological conditions.. In addition, the remainder of the plume EPZ should be advised to go indoors and monitor EAS broadcasts.

2.3.2 Sheltering

Issue 2: Use of sheltering as an alternative to evacuation for short term releases.

Both NUREG 0654 (Ref 2) and EPA 400 (Ref 3) suggest that sheltering be performed for short term (puff) releases or when it provides a benefit greater than evacuation. In the context of emergency conditions, prediction of release duration is difficult. Continuous and rapidly changing conditions, lack of or inaccurate instrumentation and uncertainty of the timeliness and effectiveness of mitigative actions make such a prediction inherently inaccurate. Moreover, choosing to shelter a population rather than evacuate based on erroneous release duration estimation can result in significant health effects on that population. As such, it is appropriate to identify likely sources of short term releases in the planning process, so that considered protective actions can be developed. For example, controlled evolutions such as containment venting are characterized by definitive actions that provide some measure of certainty regarding release duration and resultant doses. On the other hand, releases from unmonitored release paths would result in highly uncertain assessments of source term.

Industry position:

A licensee shall integrate the use of sheltering for short term releases into their protective action recommendation scheme. If a licensee cannot readily or accurately determine release duration, and dose or plant conditions warrant, then evacuation should be recommended.

Issue 3: Use of sheltering for impediments

EPA 400 (Ref 3) provides guidance to shelter when EPA protective action guidelines are met, but evacuation is impractical due to impediments. It lists impediments such as severe weather, long mobilization times (such as medical patients or prisoners and guards) or traffic issues (inadequate roads). Similarly, NUREG 0654 (Ref 2) suggests sheltering when conditions exist that make evacuation dangerous or for transit dependent persons awaiting transportation. During an emergency, licensees typically are unaware of emergent impediments to evacuation, as that information is obtained and acted upon by offsite agencies.

However, the use of sheltering for populations that cannot be expeditiously evacuated due to impediments is required to be accommodated in licensee emergency plans (Ref 6). The industry position accommodates this requirement but acknowledges that typically offsite agencies as the information source for evacuation impediments during an emergency. It is not intended that licensees solicit impediments during an emergency.

In some instances, licensees have developed alternate plans for special circumstances, in coordination with state and local officials. For example: a licensee plan that recommends evacuation at a Site Area Emergency due to impediments that would be created by an evacuation of the public at a General Emergency. In such cases, these alternate plans should continue to be part of the emergency plan.

Industry position:

Licensee emergency plans shall include the use of sheltering for populations that cannot be evacuated due to impediments. A licensee is responsible for ensuring that the development of a protective action recommendation (PAR) be an informed process that does not exclude the consideration of impediments recognizing off-site agencies are ultimately responsible for making protective action decisions necessary to protect health and using a licensee's PAR as appropriate to off-site conditions. In special circumstances, the licensee may incorporate pre-planned actions more conservative than the industry position, such as evacuating at emergency classification levels other than a General Emergency.

Issue 4: Effectiveness of sheltering

EPA 400 (Ref 3) contains a significant range of guidance regarding the effectiveness of sheltering ("...almost 100 percent to zero..."). That guidance also contains diverse practical suggestions regarding maximizing the effectiveness of sheltering. In addition, circumstances are detailed as to when sheltering is ineffective. The diversity of this guidance, likely issues of public compliance with detailed sheltering instructions and time constraints on protective action decision processes lead to a large number of possible implementation schemes and instructions of varying usefulness. The industry favors a qualitative approach to sheltering that utilizes simple instructions to the public for implementation. However, in accordance with RIS 2004-13, regardless of any understanding the licensee may have with state and local authorities, licensees shall recommend sheltering, consistent with existing guidance and the Industry Positions detailed in this paper.

Industry Position:

Licensee may opt to utilize a range of sheltering implementation schemes, including:

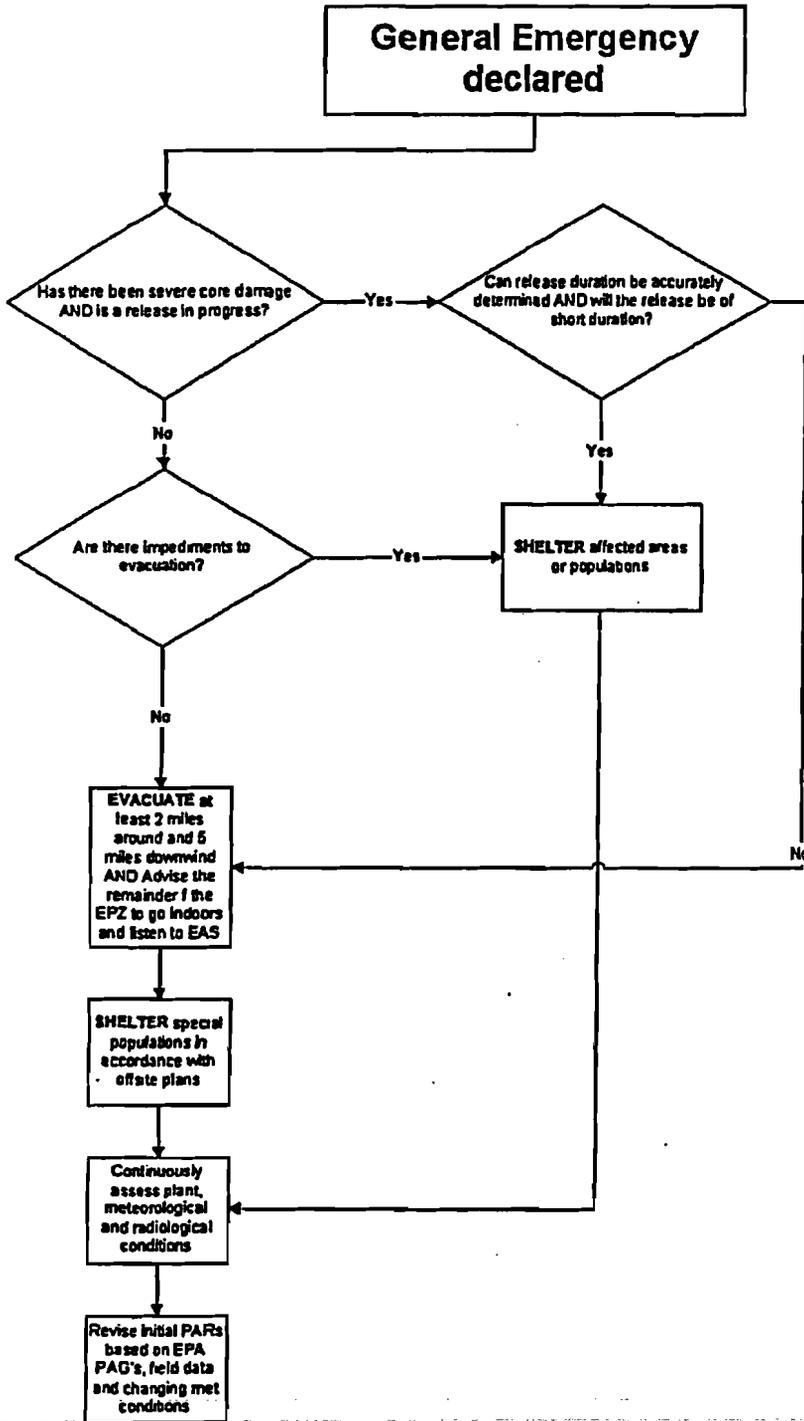
- *The use of qualitative methods for determining the effectiveness of sheltering. Example, if certain plant or radiological conditions exist, then shelter, OR*
- *The use of quantitative methods for determining the effectiveness of sheltering. Example, the comparison of sheltering versus evacuation doses.*

2.3.3 Use of KI for the General Public

No industry issues associated with the implementation of this protective action

3.0 Summary

The following flowchart summarizes the Industry Positions detailed in this paper:



4.0 References

(Ref 1) 10 CFR 50.47(b)(10): A range of protective actions including sheltering, evacuation and prophylactic use of iodine have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during and emergency, consistent with Federal guidance, are developed and in place and protective actions for ingestion pathway EPZ appropriate to the locale have been developed (66 FR 5440, Jan 19,2001)

(Ref 2) NUREG 0654 FEMA REP 1 Supplement 3: Criteria for Preparation and Evaluation of radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants-Criteria for Protective Action Recommendations for Severe Accidents (July 1996)

(Ref 3) EPA 400-R-92-001: Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (October 1991)

(Ref 4) NUREG 0654 FEMA REP 1: Criteria for Preparation and Evaluation of radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants-Criteria for Protective Action Recommendations for Severe Accidents, Appendix 1 Emergency Action Level Guidelines. (November 1980)

(Ref 5) NEI 99-01: Methodology for Development of Emergency Action Levels (September 2002)

(Ref 6) NRC Regulatory Information Summary RIS 2004-13: Consideration of Sheltering in Licenses Range of Protective Action Recommendations (August 2004)

NRC Yellow Announcement

**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

Announcement No. 043

Date: June 24, 2005

To: All NRC Employees**SUBJECT: MANAGERIAL ASSIGNMENTS AND SELECTIONS**

I am pleased to announce the following senior management assignments:

James F. McDermott has been appointed Director, Office of Human Resources. Mr. McDermott joined the NRC in 1976 as a Personnel Management Analyst in the former Division of Organization and Personnel in the Office of Administration (ADM). Since that time, he has held a number of progressively more responsible positions including, Chief, Staffing and Position Evaluation Branch, Division of Organization and Personnel; Administrative Assistant to former Chairman Palladino; and Director, Program Support Staff, ADM. In 1986, Mr. McDermott was selected for the Senior Executive Service (SES) position of Director, Division of Organization and Personnel, ADM. Since 1987, Mr. McDermott has served as Deputy Director, Office of Human Resources (formerly the Office of Personnel). Mr. McDermott received a B.A. degree in Philosophy from La Salette Seminary College and a S.T.L. in Theology from Angelicum University in Rome, Italy. Mr. McDermott's appointment was effective June 19, 2005.

James E. Lyons has been appointed Director, Division of Systems Safety and Analysis, Office of Nuclear Reactor Regulation (NRR). Mr. Lyons joined the NRC in 1981 as a Project Manager in NRR. Since that time, he has held a number of progressively more responsible positions including, Chief, Technical and Operations Support Branch, NRR; Assistant Director for Comanche Peak Technical Programs, Office of Special Projects; Section Chief, NRR; Project Director, NRR; and Deputy Branch Chief, Events Assessment, Generic Communications and Non-Power Reactors Branch, NRR. In 2000, Mr. Lyons was selected for the SES position of Associate Director for Technical Support, Advisory Committee on Reactor Safeguards/Advisory Committee on Nuclear Waste (ACRS/ACNW). In 2001, he was appointed Director, New Reactor Licensing Project Office, NRR, which was later restructured as Program Director, New, Research and Test Reactors. In 2004, Mr. Lyons was appointed to his most recent position of Deputy Director, Division of Licensing Project Management. Mr. Lyons is a 2001 graduate of the SES Candidate Development Program. He received a B.S. degree in Applied Science from the U.S. Naval Academy. Mr. Lyons' appointment is effective June 26, 2005.

In addition to the above managerial appointments, I am pleased to announce the following selection of an SES Candidate Development Program candidate:

Ho K. Nieh, Jr. has been selected for the position of Project Director, NRR. Mr. Nieh joined the NRC in 1997 as a Reactor Inspector in Region I. From 1997 to 1999, he served as Resident Inspector at the Salem Resident Office. From 1999 to 2001, he served as the Senior Resident Inspector at the Ginna Resident Office. In 2001, Mr. Nieh was selected as Senior Regional Coordinator/Program Engineer in the Office of the Executive Director for Operations (OEDO). In 2003, he was reassigned to the Office of Nuclear Security and Incident Response (NSIR) as Chief, Operations Section in the Division of Incident Response Operations. In 2005, Mr. Nieh was appointed to his most recent position of Technical Assistant to the Director, Emergency Preparedness Directorate, NSIR. Mr. Nieh was a participant in the 2004 NRC Leadership Potential Program class. He received a B.S. degree in Marine Engineering from the State University of New York Maritime College and has completed graduate

studies in nuclear engineering at Rensselaer Polytechnic Institute. Mr. Nieh will transition to his new position in the next several weeks. He will serve in an acting capacity pending SES certification from the Office of Personnel Management.

Please join me in congratulating these individuals on their new assignments.

/RA/
Luis A. Reyes
Executive Director for Operations

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The White House

PRESIDENT GEORGE W. BUSH



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For Immediate Release
Office of the Press Secretary
June 22, 2005

President Discusses Energy Policy, Economic Security

Calvert Cliffs Nuclear Power Plant

Lusby, Maryland

In Focus: Energy

10:00 A.M. EDT

THE PRESIDENT: Thanks for the warm welcome. Thanks for letting me interrupt your workday. (Laughter.) I hope it's okay. (Laughter.) I really appreciate you having me. It's a good -- I like to get out of Washington, and I like to pay a visit to our neighbors outside the Beltway. So I appreciate you letting me come by.

Thanks for the tour of this important facility. I want to thank those back at the control room for being so gracious and kind and taking time to explain all the dials and gauges. (Laughter.) I can play like I understand what I saw. (Laughter.)



But one thing is for certain, that when the people of Maryland flip a switch and see their lights come on, they need to thank the people working here at this plant. This plant is providing a lot of important power for people all over the state of Maryland. I've come to talk about economic security. I've come to talk about the need to get a good energy policy out of the Congress. And there's no better place to do it than right here in Calvert Cliffs. Thanks for letting me come. (Applause.)

Laura didn't come with me. She's out west with our daughter, Jenna, in the Grand Canyon. How about that? (Laughter.) She's doing a great job as the First Lady. She is a fabulous wife and a great mom, and she sends her best to all the good folks who work here at Calvert Cliffs. I appreciate the Secretary of Energy joining me today. He's a good man, he knows a lot about the subject, you'll be pleased to hear. I was teasing him -- he taught at MIT, and -- do you have a PhD?

SECRETARY BODMAN: Yes.

THE PRESIDENT: Yes, a PhD. (Laughter.) Now I want you to pay careful attention to this -- he's the PhD, and I'm the C student, but notice who is the advisor and who is the President. (Laughter and applause.) He's a good man, and I really appreciate working with Sam to achieve a great national goal, which is become less dependent on foreign sources of energy.

I appreciate Nils Diaz, who is the Chairman of the NRC, the Nuclear Regulatory Commission. Thanks for coming. I want to thank Governor Bob Ehrlich from the great state of Maryland. I appreciate you coming, Governor. Thanks for being here. He's a pro-jobs, pro-growth, pro-small business governor. And I enjoy working with him to help create an environment that helps people realize their dreams.

- February 2001
- January 2001

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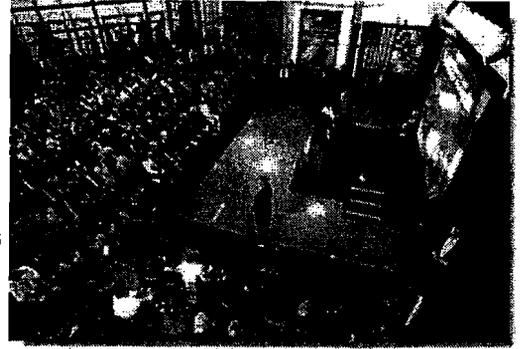
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I want to thank George Vanderheyden, who is the Site Vice President of the Calvert Cliffs Nuclear Power Plant. He represents -- at least on the tour -- represented a lot of the good folks who work here. I want to say something about the folks who work here. I want to thank you for your hard work and I want to thank you for your patriotism and your love of your country. I understand that six of your fellow employees are now in Iraq. And for the families and the co-workers here, I say, thank you, on behalf of a grateful nation for supporting these good folks. These folks are there defeating terrorists who cannot stand the thought of democracy and freedom, defeating them there so we do not have to face them here at home. These folks are there spreading democracy and freedom, understanding that a democratic world is more likely to leave a foundation for peace for our children. So I want to thank you for your sacrifices and thank you for supporting those good folks. (Applause.)

I want to thank the President and the CEO of Constellation Energy, Mayo Shattuck. That's a pretty cool first name, isn't it, Mayo. (Laughter.) Pass the Mayo. (Laughter and applause.) His wife, Molly, appreciated that. (Laughter.) I want to thank Mike Wallace, Skip Bowman. Thank you all. Thanks for letting me come by.



As you know, I'm an optimistic person, and I hope you are, as well. These are incredibly hopeful times for our country, and the state of our economy is strong. And Americans from all walks of life have got good reason to be confident about the future of this country. Let me just give you some of the facts. Over the past year, America's economy has grown faster than any major industrialized economy in the world. In other words, we're leading growth when it comes to major industrialized economies.

Over the past two years, America has added more than 3.5 million new jobs. The unemployment rate is down to 5.1 percent. That's lower than the average rate in the 1970s, the 1980s, and the 1990s.

In Maryland, the unemployment is 4.2 percent. People are working. I'm proud to report that more Americans are working today than ever before in our nation's history. Our economy is sustaining low inflation rates, low interest rates, and low mortgage rates. Small businesses are flourishing. Families are taking home more of what they earn. Your after-tax income -- incomes are up. More Americans are going to college than at any other time in our nation's history. More Americans own their own businesses than ever before. And home ownership in America is at an all-time high.

This strong and growing economy is lifting our standard of living, and that's important because that means opportunity is being spread throughout the country. Now listen, I understand parts of our country are still struggling from the effects of the recession and the attacks. I know some workers are concerned about jobs going overseas. I know some are concerned about gaining the skills necessary to compete in the global market that we live in. I know that families are worried about health care and retirement. And I know moms and dads are worried about their children finding good jobs.

See, even though the numbers are still good, there are still worries out there in the country. And these are the challenges of a rapidly changing economy. And we've got the responsibility in government to take the side of our working families. So we're moving aggressively -- we're not taking the good numbers for granted; we're moving aggressively with a pro-growth, pro-worker set of economic policies that'll enhance economic security in the country.



Economic security happens for our workers and families when we keep your taxes low. It happens when we open up new markets for American products. It happens when we stop the spread of junk lawsuits. We're going to create economic security for moms and dads by making health care more affordable, by guaranteeing a quality education for every child, and ensuring dignity in retirement. And that's what I've come to talk to you about today.

The United States Congress has now an opportunity to create more economic security by passing an energy bill that will make energy more affordable and reliable for generations to come. Energy is vital to the future of this country. Everybody who works here knows that. Everybody who turns on their light switch should know that. It's obvious that we can't expand our economy if businesses don't have energy. You've got to have energy if you're going to be a farmer. You got to have energy if you're just trying to raise a family. If you're a baseball fan, you need energy. I mean, try going to a night ball game -- (laughter) -- without any lights. How about the Nats and the Orioles, by the way, speaking about baseball? (Applause.)

Our nation needs to confront a basic problem -- we're using energy faster than we're producing it. And the problem has been building for a long period of time, because we really haven't confronted this problem. That's why I submitted this strategy to Congress when we first got up to Washington. Over the past decade, America's energy consumption has been growing about 40 times faster than our energy production. Think about that. Four years ago, I said to Congress, let's deal with this problem now.

The problem is, there's been a lot of debate and a lot of politics, but no results. So now is the time, for the sake of our consumers and business folks and people who are trying to heat their homes in the winter and cool them in the summer and find reasonable gas prices at the -- gasoline prices at the pump, it's time for Congress to stop the debate, stop the inaction, and pass an energy bill. (Applause.)

And I appreciate Chairman Barton in the House, that moved a good -- where he'd been able to move a good bill to the floor and it got voted on. I appreciate Senator Domenici of New Mexico for moving a bill out of committee; it's on the Senate floor. They need to get it passed out of the Senate. They need to reconcile their differences. They need to get me a bill before they go home in August. And I'm looking forward to signing that bill, and it's going to be an important part of developing a national energy strategy.

Look, I recognize, and I hope you recognize, that when I sign that bill, your gasoline prices aren't going to drop. This problem has been long in the making. But by addressing it now, we're going to be able to say, life's going to be better for our children and grandchildren.

To make this country less dependent on foreign sources of oil, we need the following things: One, we need to encourage our citizens to be better conservers of energy, and technology will help a lot. There's some incentives in the bill to encourage conservation. We need to make more efficient use of existing energy sources like oil, coal and natural gas. We've got a lot of coal in this country, about 250 years' worth of coal. I'm convinced that with proper use of technology that we will be able to develop coal-fired electricity plants that have got zero emissions. We're spending a fair amount of your money to make sure that we can achieve that objective. I think it's a good use of your money. It's a way to help make sure we use an abundant resource that we have here in America without polluting the air.

We need to diversify our energy supply by increasing the use of alternative and renewable sources, like ethanol, which is made from corn, or biodiesel made from soy beans. I went to a soy bean refinery the other day in Virginia where they're making diesel fuel from soy beans. With the right, you know, proper use of your dollars to encourage research, it's very conceivable that source of energy will become economic. And that makes sense, doesn't it? Can you imagine walking -- walking down the road here in the farmlands of Maryland, you see a guy growing soy beans, you say, thanks, buddy, for making us less dependent on foreign sources of oil.

So there's some smart things that this energy bill will encourage the country to do, including solar power and hydrogen. I don't know if you remember I laid out I thought -- I know an interesting initiative: it said, why don't we explore how we use hydrogen power -- hydrogen to power our cars, to help us diversify away from dependency upon hydro carbons. And I believe we can develop a hydrogen-power automobile over the next decade or two. I think it will be cool if your young son is able to take a driver's test in a hydrogen-powered automobile that has got zero emissions, and at the same time will make us less dependent on hydrocarbons which we have to import from foreign countries.

We need to modernize the electricity grid, and make reliability standards mandatory. We also need to make -- get rid of some of these laws that prohibit the capacity for those people who are building transmission lines and powering our cities and states to be able to raise money in an effective way.

We need to help large energy users like India and China become more efficient. And by helping them develop efficiency standards, it'll take pressure off of global demand for hydro carbons. One of the reasons why your price of gasoline is going up is, one, we're dependent on foreign sources of oil; and, two, economies like China and India are demanding more oil in a limited supply -- in a market that's of limited supply, which causes the price of oil to go up, which causes the price of gasoline to go up. So it makes sense to help those who are demanding more energy to be more efficient users of energy.

And I'll take that message to the G8 in Scotland here, right after the Fourth of July celebrations, to say, look, let's work together on a comprehensive energy plan to help these new consumers of energy be better users of energy.

The energy bill will also help us expand our use of the one energy source that is completely domestic, plentiful in quantity, environmentally friendly, and able to generate massive amounts of electricity, and that's nuclear power. (Applause.)

Today, there are 103 nuclear plants in America. They produce about 20 percent of the nation's electricity without producing a single pound of air pollution or greenhouse gases. I think you told me that 20 percent of all Maryland's electricity is produced here at this plant. Without these nuclear plants, America would release nearly 700 million metric tons more carbon dioxide into the air each year. That's about the same amount of carbon dioxide that now comes from all our cars and trucks.

Across this state, Maryland has looked to Calvert Cliffs to keep their lights on and to keep their land, air and water clean. In other words, you're generating electricity and helping the environment at the same time. That's an important combination of talents and -- it's an important combination of -- that the American people have got to understand it's possible when we expand nuclear power.

Nuclear power is one of America's safest sources of energy. People out here practice a lot of safety, they're good at it. You've got nuclear engineers and experts that spend a lot of time maintaining a safe environment. Just ask the people that work here. You wouldn't be coming here if it wasn't safe, I suspect. (Laughter.)

Some Americans remember the problems of the nuclear plants -- that the nuclear plants had back in the 1970s. We all remember those days. That frightened a lot of folks. People have got to understand that advances in sciences and engineering and plant design have made nuclear plants far safer, far safer than ever before. Workers and managers are trained and committed and spend hours working on nuclear safety, and that's good. And they do such a good job here at Calvert Cliffs that this was the first nuclear plant in America to get its operating license renewed. And I congratulate you. (Applause.)

There is a growing consensus that more nuclear power will lead to a cleaner, safer nation. Slowly but surely, people are beginning to look at the facts. One of the reasons I've come to this plant is to help people understand the difference between fact and fiction. Yet, even though there has been a growing consensus over time, America has not ordered a nuclear plant since the 1970s. By contrast, France has built 58 nuclear plants in the same period of time. By contrast, China now has eight nuclear plants in the works and plans to build at least 40 more over the next two decades.

In the 21st century, our nation will need more electricity, more safe, clean, reliable electricity. It is time for this country to start building nuclear power plants again. (Applause.)

We're taking practical steps to encourage new construction of power plants. Three years ago, we launched the Nuclear Power 2010 Initiative, which is a \$1.1 billion partnership between government and industry to coordinate the ordering of new plants. The Department of Energy is working with Congress to reduce uncertainty in the nuclear plant licensing process. Look, you don't want to go out and build a plant, spend all the money, and have the license jerked at the last minute. (Laughter.) Nobody's going to spend money if that's the case.

And so we want to have a rational way to move forward, and one rational way to move forward is to provide incentives for new construction such as federal risk insurance, to help the builders of the first four

And so, by the way, is opening up new markets for America's producers and farmers. We got a chance to break down some trade barriers. I told the people when I was campaigning, I said, look, I'm for free trade. I'm also for fair trade. I just want to be treated fairly. If we treat you one way, you treat us the same way. There's a debate raging in Congress now about the Central American- Dominican Republic Free Trade Agreement. It's called CAFTA. Let me tell you the facts about this trade agreement -- I don't know if you realize this, but now 80 percent of the goods from Central America come into our country duty-free. Yet, we're not treated the same way down there. Now, that doesn't make sense to me. It seems like to me that it would make sense if we say, okay, your goods are already coming in here, treat us the same way. Just level the playing field. You've got 44 million consumers; open up your markets to our goods just like we've done to you. That's what CAFTA is all about.

See, I have a different approach than some of the economic isolationists who oppose this agreement. I believe they're pessimistic about America. I believe American workers can compete with anybody, anywhere, any time if the rules are fair. And so they need to pass CAFTA to be fair to our farmers and ranchers and workers and small business owners. (Applause.)

Millions of Americans lack economic security because of the rising cost of health care. You know this, that more than half of the uninsured work for small businesses? Isn't that interesting? One way to address health care is to say, small businesses ought to be allowed to pool risk so they can buy insurance at the same discount that big companies are able to do. Congress needs to pass what's called association health plans to let small businesses be able to enter market in a way that is -- they're able to spread risk across a lot of employees.

We need to offer incentives for small businesses and low-income workers to open tax-free health savings accounts. If you're running a small business, look into what's called HSA's, health savings accounts -- they're a really interest product that'll let your worker manage his or her own money, and at the same time make health care more affordable for the small business -- or large business for that matter. HSA's are an interesting, innovative way for people to get good health care insurance that puts you in charge of the decision-making process, that lets you make the decisions, and at the same time, save money for your health care concerns tax-free.

We need to encourage a national marketplace for health insurance. In other words, workers ought to be allowed to go on the Internet and purchase health care across state lines. We've got to create more demand within the health care place. Right now, for example, if you live in Maryland, you only buy health insurance out of Maryland, the health insurance that is certified out of Maryland. I think you ought to be allowed to go on the Internet and if you can find a better product for you in Colorado, you ought to be allowed to do that. In other words, we ought to have a consumer-friendly system, where people are encouraged to go out and make choices that meet their needs.

We need to expand health information technology. If you've really looked at your own industry here or industries across America, they're using information technology to modernize and become more efficient. Health care hasn't done that yet. You got to -- if you look at your file, your medical file, they're generally hand-written. And knowing how doctors write, it's hard to read what they've written. (Laughter.) But it's an inefficient system. And so to bring health care into the 21st century, we're working on an information technology initiative.

To reduce the cost of medicine for every doctor, every patient and every business, it's time for Congress to pass medical liability reform. One of the biggest problems we got here in America is junk lawsuits running good doctors out of practice. We've got OB/GYNs leaving the practice of medicine all across this country because they can't afford to stay in business. And that's not right.

When I first came to Washington, I said, well, maybe medical liability reform was a state issue. I was the governor of a state, so I was kind of -- felt like we could do a better job in our respective states of dealing with medical liability until I looked at the cost of what these junk lawsuits were doing to the federal budget.

See, if you think you're going to get sued, oftentimes you practice more medicine than necessary. It's called the defensive practice of medicine. Ask your local doctor and he'll tell you what I mean by that. If you are getting sued a lot, your premiums go up. And in that the federal government pays a lot of health

care costs through Medicaid, Medicare, veterans' health benefits, we're spending a lot of money at the federal level as a result of these lawsuits.

And so I decided that this was a national problem that required a national solution. And for the sake of affordable and available health care, Congress needs to pass medical liability reform. And I urge them, I urge the members of the United States Senate, where the bill is stuck, not to listen to the trial lawyers but to listen to the patients and doctors all across America. (Applause.)

To make sure that we have economic security for generations to come, we've got to make sure we have quality education for every child. You can't compete unless your children can read and write and add and subtract. The No Child Left Behind Act we passed is challenging what I've called the soft bigotry of low expectations. That means you have your expectations so low you just move the children through the system without measuring whether or not they can read and write. In other words, if you don't think certain children can read and write, the easy path is just move them through. I have a – I had a different view when I came to Washington. I said, I believe every child can read and write, and I expect every child to read and write, and in return for federal money, we want schools to show us whether or not children are learning to read and write. That's how you – that's how you achieve results, you measure.

And so we've asked schools, we said, look, we're giving you a lot of money at the federal level, so in return for that money, just show us, that's all you got to do. Show us whether the curriculum you're using is working, show us whether or not children are learning to read and write.

And it's working here in Maryland. You're doing a good job, Governor, so are your education people – the teachers all across the state. And here's why I can say that: Since the No Child Left Behind Act took effect, reading and math scores have increased in all 24 of Maryland's public school systems. How do you know? Because we measure; we're not guessing. We used to guess, now we measure, so we know.

In 2003, 39 percent of Hispanic third graders in Maryland met the standards in reading – 39 percent. We have an achievement gap in America. Two years later, more than 63 percent are meeting the standards. In other words, when you measure, you can determine whether or not what you're using in the classroom is working. And if not, it gives you reason to change. The gap – in that the gap is closing all across the country is really good news for the future. We've got to make sure every child from every background, every part of America, gains the basic skills necessary to become employable in the 21st century, which means I think we need to expand the high standards and accountability of No Child Left Behind to our public high schools so that the high school diploma means something. When you graduate, it means you can – means you're employable, or it means you can go to a community college, or it means you go to higher education. That's what we ought to be doing.

This country ought to maintain high standards and strong accountability to make sure we have economic security in the future. And finally, Americans need to know that if they work hard all their lives, they can retire with dignity.

You might have heard, I've decided to address the Social Security issue. (Laughter.) Let me tell you why I've addressed the issue. One, we have a problem. And secondly, I believe that the job description of a President ought to be, this person ought to confront problems, not pass them on to future Presidents and future generations. I believe that's my job. (Applause.)

If you're getting a check, or you've got a mother or a grandmother getting a check, tell them that person has no problem when it comes to Social Security. You're going to get your check. I don't care what the politicians say, or what the rhetoric – how heated the rhetoric becomes, seems like every time I've run for office, they said, if he gets in, he's going to take away your check. Well, people are still getting their checks, and I got in. (Laughter.) But here's the problem – (Applause.)

Here is the problem: About 73 million of us are getting ready to retire. I'm kind of looking around trying to figure out who the baby boomers are. (Laughter.) Generally, people without hair, or gray hair. (Laughter.) My retirement date, for example, my age when I'm eligible for retirement benefits happens to fall on 2008, which is a convenient year for me to be – (laughter) – be in a position to retire. (Applause.)

But a lot of us are getting ready to retire. As a matter of fact, I told you 73 million baby boomers are getting ready to retire. That contrasts with the 40 million folks who have retired today. So you got a lot more of us getting ready to enter the system. And we're going to live longer. And interestingly enough, I'm sure you're aware of this, but Congress over the past years has said, vote for me, I'm going to promise you better benefits. And so my generation, our generation, is going to get greater benefits than the previous generation. You've got a lot of people living longer, being promised greater benefits, with fewer people paying in the system.

In 1950, there was about 16 workers to one paying into the system. Today, there's 3.3 workers to one. Soon there will be two workers to one. You've got a lot of youngsters coming up carrying a hefty burden for old guys like me.

And so -- and what that means is, is in 2017, which I guess seems like a long time to people in Washington, D.C., if you've got a two-year horizon, 2017 seems like ages. But 2017 is right around the corner, it's 12 years from now. If you've got a child four years -- four years old and you can get your driver's license at 16, they'll be driving before you know it. By the way, it's a little nerve-racking.

And so I think it's time to act, and if we don't, we're going to start running some serious cash deficits, because in 2017, the system goes in the red; 2027, it's about \$200 billion a year in the red; 2030, it's about \$300 billion a year in the red. I know this is a tough issue for some of them in Washington. And the tendency is, let's just don't worry about it. Mr. President, why did you bring it up? Let's just pass it on.

The reason I brought it up is I cannot travel our country, looking at young workers who are paying payroll taxes into a system that I know is going broke. And so now is the time to come together, both Republicans and Democrats, forget all that party business, and come together and solve this problem permanently, forever.

And I put some ideas on the table. And I expect people from both parties to put ideas on the table, and so do the American people. They're tired of this partisan bickering. When they see a problem, they want the American people to come and solve it. They tell me, well, you're not making much progress on Social Security. Well, I'll tell you one thing I am making progress on -- the overwhelming number of Americans that understand we have a problem. And I suspect the overwhelming number of Americans say if there's a problem in Washington, how come you're not doing anything about it?

And I'm going to continue talking about this issue. And I put a plan out that says you can't retire -- if you've worked all your life, a hardworking person, you shouldn't retire in poverty. And it's a plan, by the way, that says benefits will grow at the rate of wage increases for lower income Americans and the rate of inflation for the top one percent. And that solves about a significant portion of the problem.

And I also believe something else. I believe younger workers ought to be able to take some of their own money, if that's what they choose, and set it aside in a personal savings account. (Applause.) In other words, you're paying payroll taxes in a system that's going broke. By the way, they call it pay-as-you-go. A lot of people in Washington -- in the country probably think the payroll -- the Social Security system is, I'm paying my payroll taxes and the government's holding my money for me and giving it back to me when I retire. I hate to tell you, that's not the way it works, and it hasn't worked that way for a long time. We take your money and we pay out to the retirees, and if we have money left over, like we have now, we're spending it on government programs. And all that's left is a file cabinet full of IOUs in West Virginia and I went and saw the file. You'll be happy to hear the paper's there -- (laughter) -- but not your money. In other words, all you're left with is an IOU.

What I think you ought to be left with, if you so choose, is some assets. And so I believe younger workers ought to be allowed to take some of their own money, if they want to, as a part of a Social Security system, and set it up in a conservative mix of bonds and stocks or only bonds or whatever you choose to use. It's kind of like a 401(k). I suspect you've got a 401(k) plan here.

I went to an automobile plant in Mississippi. I said, anybody here have a -- manage their own money as part of their retirement? These were line workers. These weren't the office workers, there were the people out there making the automobiles, people from all walks of life, all income levels, all education levels. And

I'll bet you 90 percent of the folks raised their hands. In other words, they say, we're used to that, Mr. President, we're managing our own money. We're opening up our statement on a regular basis watching our money grow.

Right now, if you -- your money in Social Security is growing at about 1.8 percent. That doesn't seem a very good deal to me. We ought to -- if you so choose, we ought to let you earn a reasonable rate of money, a reasonable rate of return on your own money. And that money grows over time and it compounds. And if you're a young worker at age 20 and you start setting aside some of your own payroll taxes in a reasonable rate of return, you're going to watch that money grow. And it's your assets and the government can't spend it on what they want and they can't take it away and you can pass it on to whomever you choose.

And let me tell you something about personal accounts. It was such an attractive idea that the United States Congress said it's part of their retirement plan. They're going to let members of the United States Senate or House of Representatives take some of their own money and set it aside in a personal account. And my attitude is this: If personal -- voluntary personal savings accounts are good enough for the members of the United States Congress, they're good enough for workers all across America. (Applause.)

And so here's the way forward, a way to encourage economic security and smart ways to make sure this economy continues to grow so people can realize dreams. That's really what government ought to do, it ought to create that environment in which people are able to realize dreams and own a home and own your own business, own and manage your own retirement account. I love the idea of an ownership society. The more people own something in America, the better off America is, as far as I'm concerned. The more people own -- the more assets people own, the more independent Americans are. They feel confident about the future. And I'm confident about our future. I don't think there's any problem we can't solve when we put our minds to it.

Things are going fine right now. But my job is to keep looking down the road. My job is to figure out how to keep this economy growing. My job is to get Congress to do -- make wise policy so the entrepreneurial spirit is strong, so people can realize dreams, so this country remains the great beacon of hope that it has been in the past.

I want to thank you for giving me a chance to come by and visit with you. May God bless you and your families and may God continue to bless our country. (Applause.)

END 10:44 A.M. EDT

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Inside NRC

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Another term for McGaffigan appears to be strong possibility

It appears likely that Edward McGaffigan will be renominated by the White House to serve another five-year term on the NRC, although it is unclear whether all the paperwork will be processed before his second term expires June 30, several sources said. But there are still some rumors that his renomination could get caught up in the search for a replacement for Chairman Nils Diaz, whose term is up at the end of June 2006.

There has never been an NRC commissioner who served three terms. But McGaffigan is widely viewed as taking a non-partisan approach to issues, and his continued service would ensure the political makeup of the commission would be maintained. By law, there cannot be more than three commissioners from any one political party.

McGaffigan and Commissioner Gregory Jaczko are Democratic appointments; Chairman Nils Diaz and Commissioners Jeffrey Merrifield and Peter Lyons are Republican appointments. "Ed is widely respected on both sides. He's an independent voice," said a congressional aide, who confirmed that the administration is conducting the background investigation required for political nominees. However, the Senate aide said that nothing is certain until the nomination is sent to the Senate for confirmation.

McGaffigan has twice been confirmed

by the Senate under unanimous consent, an approval process used for non-controversial nominees. His renomination, if it occurs, is likely to be quickly approved, the Senate staffer said. Although the administration appears to be moving forward with the nomination, McGaffigan has been making plans for retirement after June 30, and some of his staffers have begun preparing to move to other offices within the agency.

There had been some talk outside the agency that the White House might wait until Chairman Nil Diaz's term is up next year so that there would be a Democrat and Republican pairing, which has been the practice for the past decade for getting nominations through a sharply divided Senate. Some also have said that the White House is even considering Dale Klein, assistant secretary for nuclear, chemical and biological defense programs in the Department of Defense, as Diaz's successor. But one source said Klein has said he is content at the Department of Defense and currently is not interested in moving to the NRC.

The Senate staffer said it was unlikely the White House was making such advanced plans for the NRC. But that fact that many recent nominations to the NRC have been done in pairs—McGaffigan and Diaz, Greta Dicus and Merrifield, and this year, Jaczko and Lyons—fuels the speculation that political considerations in the Senate will influence the renomination process.

The political wrangling for filling the last two commission vacancies at the agency became so heated that President George W. Bush avoided a Senate vote on Jaczko and Lyons by making them recess appointments, good only through the end of 2006. Bush has subsequently sent both names to the Senate for confirmation to full terms. It is unclear, however, if there will be an attempt to confirm McGaffigan, Jaczko, and Lyons together.

At the agency's May 11 annual, all-employees meeting, one NRC staffer noted the recent contentious nomination process and asked Jaczko whether he would make technical decisions "free from political considerations."

Jaczko responded that he believed he could do the job without politics interfering and that he intended to make "objective," "reasonable," and "transparent" decisions. "While I believe the commission is not a political body," he said, "unfortunately, or fortunately, the Congress is. And a lot of the issues surrounding confirmation and those processes right now are very political, and probably always

will be."

Diaz agreed that the political appointment process can be filled with unexpected turns. He said at the employees' meeting that he was originally supposed to come to DOE in 1990 but that the process became "too political for me, and so it didn't happen." In early 1995, he was told that his nomination to the NRC would take place quickly, but it soon stretched into an 18-month process, he said.

"Sometimes it's long, sometimes it's complicated, and it is political," Diaz said. However, Diaz said commissioners' differences are not politically motivated. "We have different opinions. We have different ways of looking at [issues]," he said.

McGaffigan was similarly emphatic that politics was not a factor in commission decisions. "We have disagreements, but they're not Democratic or Republican," he said, adding later that a bipartisan commission doesn't mean that partisan decisions are made. "But a bipartisan commission assures the Congress that we're doing reasonable things." But it was Merrifield who was most passionate in saying that politics does not factor into commission decisions. "There has not been a single vote in the seven years that I've been here that I would characterize as being political. And I would disagree with everybody on this commission, and sometimes very strongly, but it was out of a disagreement philosophically on safety issues, not a disagreement philosophically on political issues," Merrifield said.

He added: "We have to learn to trust each other. We have to learn not to seek underlying motivations in what we're doing as commissioners, but to look honestly and candidly at the views of our fellow members to try to determine what is the best public policy outcome for protecting the public health, safety, and the environment."

—*Jenny Weil and Michael Knapik, Washington*

PSU research challenges NRC on pipe breaks

Data on pipe-break frequency in nuclear and other industrial applications compiled by Pennsylvania State University (PSU) graduate students differ considerably from information used to develop NRC's proposed risk-informed rule for core cooling requirements (10 CFR 50.46).

The student project was coordinated by PSU nuclear engineering professor Lawrence Hochreiter, an outspoken, widely respected critic of risk-informing 50.46 (INRC, 4 April, 1). Hochreiter's April 2005 submission of preliminary results from the project to Brian Sheron, associate director for project licensing and technical analysis at NRC's Office of Nuclear Reactor Regulation, was released June 1 on NRC's Adams document system (accession number ML0513304751).

The students collected "two, independent sets of data," the first "provided by the OECD Pipe Failure Data Exchange Project (OPDE), with a total of 2,891 data points," and the second consisting of "67 data points collected by our group from various sources," Hochreiter said in the report's summary. "For each instance of failure the plant type, pipe diameter, type of pipe, failure mechanism, and type of failure was recorded. The data was then collapsed based on plant type (PWR or BWR), type of pipe (carbon or stainless steel), pipe size and failure mechanism. Then, normalized failure frequencies were calculated as a function of both pipe size and failure mechanism per reactor year," he said.

"The results from both the OPDE and the independent sets of data detailed in this report do not support the NRC's assertion that larger sized pipes do not break frequently enough to be used as design criteria. The overall trends of both sets of data show that the frequency of failures does not decrease as sharply with increasing pipe size as the NRC predicts," Hochreiter said.

For pipes over 10 inches in diameter, NRC predicts failure frequencies of $3.9E-08$ for PWRs and $2.2E-06$ for BWRs. Based on the OPDE data, the PSU project calculated failure frequencies of $4.2E-05$ for PWRs and $7.2E-05$ for BWRs—a

failure frequency more than three orders of magnitude greater than NRC predicted in the PWR case. Also, "the OPDE results for both PWR and BWR plants show a much more consistent failure frequency both over the range of pipe sizes and between PWR and BWR plants" than do the NRC data, the report said.

Accurate prediction of pipe-break frequency, particularly for larger-diameter pipes, was integral to the development of the proposed risk-informed 50.46 rule, sent by staff to the commission March 29 (INRC, 4 April, 1). The technical basis for risk-informing treatment of pipe breaks above a specified "transition break size" was the results of an expert elicitation on pipe-break frequency convened by NRC, which concluded that large-pipe breaks were far less frequent than small pipe breaks, warranting different regulatory treatment and analysis (INRC, 24 Jan., 10).

Report challenged

The PSU project's results appear to challenge these assumptions, but suffer severe limitations, according to NRC and industry sources. Sheron told Inside NRC last week that he hasn't personally reviewed Hochreiter's submittal but his staff has, as has NRC's Office of Nuclear Regulatory Research (RES). The "preliminary assessment" is that the PSU students "used some data that may have been from non-nuclear applications," which NRC staff "didn't put into our assessment on purpose. We didn't think it was applicable," Sheron said.

"We haven't seen anything yet in that report that would lead us to believe that the pipe break frequencies we used are not appropriate," Sheron said. However, agency staff wants to discuss their observations with Hochreiter to "make sure he understands [and] doesn't have any other insights we missed."

"They're not really looking at something directly comparable to the NRC results," John Butler, senior project manager at the Nuclear Energy Institute, told Inside NRC last week. "They acknowledge that they look at pipe sizes, but the NRC data is based on effective break area. They're completely different," Butler said. "A little leak in a 12-inch pipe is still a little leak; you don't group that break into the same category as a double-ended guillotine break," he said.

The report's assumption "that all types of cracks, leaks, ruptures, or other issues were considered to be a complete failure in the pipe" was "initially thought to factor into the difference in results between the analyzed OPDE database and the NRC predictions," Hochreiter said in the report. "As

a result, a separate analysis considering only the pipe ruptures listed in the OPDE database was conducted. However, the calculated frequency distribution considering only ruptures did not change significantly, in either trend or magnitude, from the results obtained when considering all issues to be a failure," he said.

Additionally, "the study gathered pipe break data from a number of sources....Because they combined data from a number of industries and applications in the same data sets, it introduces a number of variables that were acknowledged but not accounted for," Butler said. "[T]he report has overlooked a major difference between nuclear piping and piping used in other industries, which is the piping wall thickness.

"Piping used in the primary system of nuclear power plants is always thick walled piping. This is not the case for other industries," Butler said. "The wall thickness will have a major bearing on the probability of rupture."

Hochreiter declined to comment for this article, saying he "would like to wait and see what [NRC staff] come up with before I make any pronouncements." In a cover letter conveying the report to Sheron, Hochreiter said he was compiling "all the independent sets of data in a spread sheet and will attempt a further screening." Once complete, the data will be sent to NRC, he said.—*Steven Dolley, Washington*

New engineering inspection process could replace baseline effort

The NRC staff believes a new engineering inspection process tested at four plants over the past year is an improvement over the current baseline approach and is recommending it be used nationwide, said a staffer who had a key role in developing the procedure.

Jeffrey Jacobson, a team leader in the inspection program branch within NRC's Office of Nuclear Reactor Regulation (NRR), said last week that a paper containing the recommendation is expected to be delivered to the commission within the next few weeks. The paper might be informational rather than a request for commission approval because no policy change would occur by revising the inspection process, he said. He noted that the commission has been very interested in the effort, particularly since it had asked the staff to look at ways to improve the effectiveness of NRC inspections in the design and engineering areas.

Speaking at a June 7 session at the American Nuclear Society's conference in San Diego, Calif., Jacobson said the paper provides an evaluation of the pilot results and details what parts of the pilot should be continued and what should be changed. The inspections focused on high-risk, low-margin components and operator actions. The new approach was completed at Vermont Yankee, Diablo Canyon, Summer, and Kewaunee by teams of seven or eight people, which included four or five NRC inspectors and three contractors. The staff is recommending the team be reduced to three inspectors and two contractors, Jacobson said.

By choosing a high-quality team, and having NRC senior risk analysts and resident inspectors at the sites participate early in the process, a smaller group of inspectors could do the job, he said.

The new inspection process is envisioned to be conducted once every two years, but after the first round, the scope of the inspection would be reduced, Jacobson said. In some cases, he said, licensee self-assessments also "may be considered based upon objective pre-existing criteria."

Based on the pilot inspections, the staff decided to eliminate extended condition reviews, which were considered best left up to licensees to perform, Jacobson said. Also, the staff decided that it would not look at initiating event sam-

ples in new engineering inspections, he said. The staff is writing a new inspection procedure to develop a "hybrid inspection derived from current SSDI [safety system design inspections] and enhanced by pilot program lessons learned," Jacobson said.

The plants that participated in the pilots found the experience to be enlightening but labor intensive. "We have 95 engineers; we had about 80 engineers involved in the inspections, with about half of them [working with the NRC inspection team] full-time," Jon Pollock, an inspection technical manager at Kewaunee, told conference attendees.

Pollock said there was one person assigned as a counterpart to each inspector on the NRC team. Pollock also said the NRC team met for one or more hours at the end of every day it was on site, a practice typical during the pilot. At another pilot plant, the hours of the engineers assigned to work with the NRC team were even shifted so there would be someone available to answer inspectors' questions. "It forced us to take a hard look at our design licensing basis," Pollock said of the inspection results.

Others agreed the inspections were revealing but found some of the inspection findings could have been avoided if their plant had been on top of matters. "We expended about 3,100 man-hours in support of the NRC team," said Mike Kammer, a design engineering supervisor at Summer. "NRC didn't find anything we didn't already know about."

Kammer said personnel "could have fixed [the problems] before NRC found them."

Overall, the inspectors found 28 green findings—meaning issues that were of low safety significance—and one unresolved item at Kewaunee.

Although 28 issues were identified, some had multiple causal factors, Jacobson said. He broke down the deficiencies as: seven were related to original design issues; five were caused by plant modifications; two were related to a lack of analysis; eight were attributed to inadequate corrective actions; three were design control concerns; seven were due to inadequate operating procedures; and four were attributed to various other causes.—*Jenny Weil, San Diego, Calif.*

NRC requests more PWR sump information before September

NRC has issued some 25 letters requesting additional information from PWR licensees on their preliminary responses to last year's generic letter on containment sumps, agency staff said last week in interviews.

Most of the requests focus on whether, when and how licensees plan to evaluate two sets of issues: chemical effects in a post-loss-of-coolant accident (LOCA) containment environment that might affect generation of debris and its accumulation in sumps, and "downstream" effects of debris fine enough to penetrate sump screens and recirculate through plant cooling systems.

Nine letters containing such requests for additional information (RAIs), all dated June 2, were released last week on NRC's Adams electronic document system. Some of the RAIs, such as the one sent to Pacific Gas & Electric's Diablo Canyon, said that, "as a result of the review of the 90-day responses for all licensees and recent discussions with industry, the staff is concerned that some licensees may be delaying the evaluation of chemical and downstream effects until after the September 1, 2005 due date for the next response to the GL [generic letter]. This would result in an incomplete response and is not in accordance with the schedule in the GL."

Those RAIs continued: "Your 90-day response...did not discuss the evaluation of chemical and downstream effects. Although the GL did not specifically request that the evaluation of chemical and downstream effects be discussed in the 90-day response, please discuss your plans and schedule for evaluating chemical and downstream effects and verify whether your September 1, 2005 response will include an evaluation of these effects."

Some other licensees told NRC that their evaluations of these effects may occur after the response due date, "depending on the schedule for testing and availability of industry guidance. This is contrary to the information request in GL 2004-02...and is also contrary to the staff's position that there are sufficient bases to address sump vulnerability to chemical effects and that the September response will be incomplete if the evaluation is incomplete, the design is not complete, or there is no schedule for upgrades," the RAIs said.

The RAIs requested plans and schedules for evaluating these effects, and "any plans for performing testing to support your evaluation of these effects."

David Solorio of NRC's Office of Nuclear Reactor Regulation (NRR) said last week that "specific language" in the August 2004 generic letter "asks for chemical effects to be included in the evaluation," and NRR staff "wanted to make sure they understood what the generic letter was asking for." Solorio emphasized that the RAIs contain "no significant change in NRC position."

Over the last several months, industry representatives have frequently expressed concern that chemical effects tests being conducted by the Los Alamos National Laboratory at the University of New Mexico, in conjunction with NRC and the Electric Power Research Institute (EPRI), will not be concluded in time to provide results usable in the September responses (INRC, 18 April, 3). "Everyone wants to file a complete response, but when information is not available to do that, we're in purgatory," Anthony Pietrangelo of the Nuclear Energy Institute said at an April 13 NRC meeting. An additional issue was raised at the meeting by John Butler of NEI. "Clearly, no plant will meet the exact conditions of these tests," Butler said. "Everybody at some point needs to justify deviations from the evaluation," but if plants need to justify "a slight deviation" from the parameters of the current chemical effects tests, "we're going to have problems," he said.

Solorio said the tests should be completed in the next few weeks, and "EPRI is free to share the information from the testing with industry immediately. The idea of the joint program was so industry could get results as NRC was getting them, so there's no lag in data-sharing with industry."
—Steven Dolley, Washington

NRC, NEI split on methodology for instrument trip setpoints

Despite some progress at a June 2 meeting, industry and NRC still have fundamental disagreements about the adequacy of a methodology used to calculate settings for instruments that monitor operational safety limits at most U.S. power reactors, agency staff and industry representatives said last week.

The dispute centers on "Method 3" of industry's standards for nuclear safety-related instrumentation, promulgated in 1994 by the Instrumentation, Systems and Automation Society (ISA). The standards establish three methods for calculating instrument trip setpoints and their associated allowable values. Trip setpoints are defined in the standards as "a predetermined value for actuation of the final setpoint device to initiate a protective action," such as tripping the reactor if the core heat is excessive. An allowable value (AV) is defined as "a value that, if exceeded, may mean the instrument has not performed within the assumptions of the setpoint calculation."

About two-thirds of U.S. power reactors use Method 3, and converting to another methodology could cost about \$1-million per site, according to industry estimates (INRC, 9 Aug. '04, 3). Since 2003 NRC staff has formally expressed concern that Method 3 is not sufficiently conservative to ensure instrument accuracy. Industry vigorously disputes this position, but agreed in March to work with agency staff to develop generic technical specifications to address the issue (INRC, 21 March, 5).

At the meeting earlier this month, industry was disappointed that NRC staff "still find Method 3 unacceptable" and that "we don't seem to be able to get past that," Michael Schoppman of the Nuclear Energy Institute's (NEI) licensing action task force told Inside NRC last week. "This is a situation where a couple of [NRC staff] reviewers are not comfortable with a methodology used across the industry [that] has previously been found acceptable," Alex Marion of NEI said. But in NEI's opinion, these reviewers "have not really articulated and documented their concerns" and do not "have a good case for a safety concern or a good case for a compliance concern," Marion said.

"NEI only got involved in this argument because of the

RAIs [requests for additional information] that were being issued on plant-specific license amendment requests that touched on setpoints," Schoppman said, adding that the industry believed the RAIs were "a misuse of process."
"If a licensee satisfies its currently licensed design basis, [NRC] should not ask the licensee to change its licensing basis absent a reasonably formulated, written safety concern or compliance concern," he said. "NRC has attempted to go in that direction by saying there might be a safety issue, but we still don't know what it is."

Thomas Boyce of the division of inspection program management within NRC's Office of Nuclear Reactor Regulation told Inside NRC last week that the June 2 meeting "hit a snag" on the issue of "using Method 3 to calculate allowable values." After a mid-meeting caucus, NRC staff presented four options to industry, only one of which said that AVs using Method 3 are unacceptable. "But people keyed on that issue, rather than the other three options," Boyce said.

"The reason we offered four options is so we could continue dialoguing. We recognized we had an issue we were in disagreement with industry on," he said. "We're in the middle of the process. We recognize this is an important issue, and we're trying to find a path forward."

"There is no circumstance in which Method 3 would not be acceptable. It's always acceptable," Schoppman told Inside NRC in response: "[NEI's] December 2003 and December 2004 reports prove this, and NRC has not documented a refutation of those submittals. We've done everything we can to defend our position, but they won't stop the RAIs, and we're still coming back to the table," he said. "We as an industry, even though we don't believe that there's a safety or compliance issue, are prepared to implement changes to the standard technical specifications to accommodate the NRC, but we're only willing to go so far," Schoppman said. Nonetheless, "we're trying to work through that with NRC" and "have a high chance of success. I'm not predicting failure."—*Steven Dolley, Washington*

German reactors may be headed for extended operating lifetimes

Should Chancellor Gerhard Schroeder be defeated by challenger Angela Merkel in a national election which may take place in September, regulators in the next German federal government would roll back the country's power reactor phase-out, and likely set up a process to fix longer unit lifetimes and relicense them for life extensions of perhaps 20 years, as NRC is doing, energy policy aides in Merkel's Christian Democratic Union (CDU/CSU) told INRC. Until 2001, when Schroeder's antinuclear coalition government of Social Democrats (SPD) and Greens legislated a phase-out of all German power reactors by limiting their remaining lifetimes to an average 32 years, German reactor operating licenses had no time limits. The phase-out agreement, crafted in 2000 by the Schroeder government and industry, ordained that the first of 17 LWRs, Obrigheim, would be decommissioned in 2005. It was shut last month. Under the phase-out timetable, the rest of the LWRs will be closed between 2006 and about 2020.

On May 24, however, the last of three SPD-Green state coalition governments, in North Rhine-Westphalia (NRW), was voted out, and the SPD was expelled from rule in NRW for the first time in nearly four decades (Nucleonics Week, 2 June, 1). Analysts in Germany are widely forecasting that the next federal election will terminate SPD-Green rule in Berlin, too. Before May 24 this contest was scheduled for late 2006 but Schroeder reacted to his party's NRW defeat by calling for an earlier election this fall. German constitutional law makes calling early elections difficult, so it is not yet certain that the election date will be moved up.

Nonetheless, Merkel and other CDU/CSU politicians have spelled out that, if they form the next federal government this fall, they will negate the phase-out's immediate effects by lengthening the lifetimes of all power reactors. The CDU/CSU leaders have also indicated that, if they take power in 2005 or 2006, they will not rush to nullify a law which bans new power reactor construction in Germany, passed by the SPD-Green parliamentary majority four years ago. Utility leaders have no current plans to try to license building new nuclear capacity in Germany and, utility sources said, the issue may remain politically dormant for the next several years. German utilities are discussing a possible investment in a PWR project in France; a decision on that may be made shortly after the federal

election.

At the top of the 2005 annual conference of the Association of German Power Producers (VDEW), opening June 8 in Berlin, Merkel reiterated her remarks made immediately following the NRW state election two weeks before, that the CDU/CSU would effectively roll back the dates of scheduled reactor decommissioning. The energy policy of a CDU/CSU-led national government, Merkel said, "will be based on an unbiased evaluation and exploitation of all available generation options... There will be no ideologically premeditated nuclear phase-out."

Merkel's statement also reflected information provided to Inside NRC from CDU/CSU energy policy experts who said last week that, if and when the phase-out timetable is rolled back, Germany will not likely return to unlimited lifetimes but would set a limit of, possibly, 40 years of operation as in the U.S. under NRC. "The lifetimes of reactors will not be indefinite," Merkel told VDEW. "We will need to have a limit."

A 40-year limit for German LWRs is now being openly advanced by Peter Paziorek, the CDU/CSU parliamentary spokesman for environmental policy and a prime candidate for a senior position at Germany's federal nuclear regulatory agency, the Federal Ministry of Environment & Nuclear Safety, should the CDU win the next election and form a government this year or in 2006.

—Mark Hibbs, Bonn

French regulators sharing EPR information with China, U.S.

French nuclear safety authorities have briefed their Chinese counterparts on what they know about Framatome ANP's EPR reactor model, and are beginning to cooperate in a similar way with the U.S. NRC, Andre-Claude Lacoste, director general for nuclear safety and radiological protection (DGSNR), said last week.

He said the initiatives follow the bilateral cooperation DGSNR has established on EPR up to now, originally with German nuclear safety authorities, before Germany legally forswore new reactors, and more recently with the Finnish Radiation & Nuclear Safety Authority, STUK, which has approved construction of the world's first EPR unit at Olkiluoto-3.

Framatome ANP submitted a bid to build a series of four EPR units in China on Feb. 28; that tender is in the evaluation process. More recently, Framatome ANP has been discussing with NRC submittal of the EPR design for certification in the U.S.

Lacoste told journalists at a briefing June 2 that DGSNR had organized a week-long seminar in Beijing in late March "to explain to (Chinese safety authorities) what we know" about the advanced evolutionary PWR design.

At the request of NRC, he added, "We are in the process of exploring with our American colleagues how they can best use the elements (of knowledge) that we have" at DGSNR and its expert bodies. Lacoste said the French regulators know "quite a lot" about EPR's design from having followed its development for over 10 years.

French nuclear regulators have been reviewing aspects of the advanced PWR's design since 1993, when together with their German counterpart (BMU) they issued a set of safety goals for future PWRs (INRC, 26 July '93, 1). At the time, Framatome and Siemens' nuclear engineering unit were collaborating on EPR design; since then, they have merged into Framatome ANP, owned 66% by Areva and 34% by Siemens AG.

Last September, after a decade of review, DGSNR issued a document approving the basic safety options of the 1,600-MW EPR design proposed by Framatome ANP, but said it would continue to analyze certain points of the design (NW, 14 Oct. '04, 6). Those points, Lacoste said in a letter to EDF

Chairman/CEO Pierre Gadonneix that contained the official approval, include the design of the reactor's molten corium recovery system and measures to exclude guillotine breaks of main primary circuit lines from the design basis.

Another sensitive point, the reactor's new instrumentation and control (I&C) system design based on off-the-shelf equipment, is also still under review but "at this stage, we don't see any show-stopper" to its being approved, Olivier Gupta, director for nuclear power plants at DGSNR, said. The ability of the EPR design to resist the crash of a large civilian aircraft is also under review, he said; Lacoste said DGSNR is "in the process of asking for some improvements" to containment design, but declined to provide more detail, citing security constraints. One point that was not cited explicitly in the 2004 design approval letter was the design of the EPR's containment sump and filter, an issue that has gained prominence because of clogging problems with containment sumps in PWRs worldwide. Gupta said that would be a subject for the regulators' review of EPR's detailed design, but added that so far, "nothing (has been found) that would rule out" the sump design proposed by Framatome ANP.

The DGSNR officials underlined that even if EPR is never built in France, it has contributed to improving nuclear safety because the regulators are requiring EDF to incorporate safety improvements into existing reactors where possible. Gupta cited a measure to exclude from the EPR design basis a steam generator tube rupture scenario involving radioactive release to the environment. "It appears that the same improvement can be backfitted onto existing reactors," he said.

Lacoste underlined that unlike the NRC's procedure in the U.S., "there is not a process for reactor design certification in France." The safety option approval was a blessing of sorts of the basic EPR design, he said, but "the final decision whether a reactor can be built or not" will be made "case by case" and will be embodied in the construction-operating license (decret d'autorisation de creation, DAC) that the government issues after the safety review of a specific reactor project.

Lacoste didn't detail the ideas that French and American regulators have for cooperation on EPR review. In the case of STUK, which has smaller in-house resources and less experience than either DGSNR or the NRC, French regulators are, for example, inspecting manufacturing of the main pressure boundary components for Olkiluoto-3 on behalf of the Finnish safety authority. A senior STUK official has also been appointed to DGSNR's standing advisory group on nuclear reactors (GPR), which has reviewed the EPR documents up to

now and will be reviewing the Flamanville-3 construction operating license application if and when EDF submits it.

Lacoste said he estimated that it would take French nuclear safety authorities between 12 and 18 months to review the license application, noting that much work on the design review was already completed by the agency.

DGSNR devoted the latest issue of its magazine, *Controle*, to the EPR reactor, both its safety aspects and the more general context. The magazine, in French with English summaries of the articles, can be accessed on the authority's Web site, at <http://www.asn.gouv.fr/Publications/dossiers/c164/dossier164.pdf>.—*Ann MacLachlan, Paris*

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Inside NRC

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'Tsunami' wave of retirements creeping up to hit NRC, industry

NRC is preparing for a giant wave of retirements that could hit the agency over the next five years, as more than a third of its workforce becomes eligible to leave. At the same time, the agency may be facing a host of new licensing challenges, including new reactors and the Yucca Mountain repository.

The potential for a mass exodus of technical staffers and their historical knowledge has generated concern at the agency's highest level. But the commissioners are not the only ones grappling with what some have dubbed the "tsunami" effect. The nuclear industry and other sectors heavily dependent on scientists and engineers also are facing a similar shift in the workforce—and the prospect that there will not be educated and trained replacements lined up behind the retiring workers.

Commissioner Peter Lyons noted at a session at the American Nuclear Society's (ANS) annual conference in San Diego, Calif. earlier this month that nearly half of the NRC staff is at least 50 years old, and 36% will be eligible to retire in the next five years.

According to the agency's latest statistics, 27% of its senior executive service (SES), engineers, scientists, and physicists are older than 55. The last count showed that 504 out of 1,896 employees fell into that age range. Approximately 72 of NRC's 153-member SES corps, or 47% of these

executives, are older than 55. The data showed several other categories with a large share of workers over 55: 77% of the structural engineers (17 out of 22 employees); 59% of mechanical engineers (16 out of 27 employees); 56% of electrical engineers (19 out of 34 employees); and 38% of materials engineers (20 out of 53 staffers).

Not far behind that were other areas facing the loss of anywhere from a fifth to a third of its workforce in the coming years: 31% of health physicists (57 out of 185 employees); 26% of general physical scientists (44 out of 167 employees); 21% of general engineers (174 out of 828 employees); and 20% of nuclear engineers (83 out of 416 employees).

Chairman Nils Diaz addressed the topic of an aging workforce, and what the agency has been doing to prepare for the inevitable departures, at the NRC's annual allemployees meeting on May 11.

"As you know, for some years, we have been predicting a rapid increase in the retirement rate and consequent loss of critical skills," he told employees.

"One telling statistic is that the list of employees that celebrated a 25th anniversary have now shrunk from 300 to 182 right now for their 30th anniversary," he said, referring to retirements before NRC's celebration this year of its January 1975 creation.

He said NRC has stepped up its recruitment and training programs in anticipation of the retirements. At the meeting, Commissioner Edward McGaffigan agreed the agency has been focusing on the "generational transition."

"We've lost of good people lately, and we're going to lose more," McGaffigan said. "And we're hiring lots of good people. And we're going to hire more."

Need for staffing

Lyons and several other panelists discussed workforce issues at a special session at the ANS conference. Lyons said the Government Accountability Office found that 37% of workers at the National Nuclear Security Administration (NNSA) with "critical skills needed to maintain the weapons

stockpile" were either at or near the retirement age. Replacing workers at NNSA or NRC is complicated because, "with few exceptions, students do not graduate with the full range of knowledge and skills they need for full contribution," he said.

Lyons said U.S. universities have become increasingly dependent on foreign student enrollment in engineering and science programs. Approximately half of the graduate students enrolled in engineering, math, and computer science are non-U.S. citizens and nearly 70% of postdoctoral researchers in engineering and physical sciences are foreignborn, he said.

University faculty also is aging, with about 30% in science and engineering disciplines falling into the 55-and-older range, Lyons said.

In the nuclear field, there has been a substantial drop in university programs over the past two decades. "In 1975, there were 77 nuclear engineering programs in the country," Lyons said. "In 2003, there were 33, as universities responded to reduced student interest. The number of university research reactors has fallen by about half since the mid-1980s."

Lyons and industry officials have spoken about the intense competition for workers that could occur if there is another nuclear plant construction boom in the U.S. "Any new plant construction would inspire more students to view nuclear technologies as a secure, long-term career choice. But it's unlikely that the supply of new candidates can increase very quickly," Lyons said.

Commissioner Jeffrey Merrifield also discussed what could happen if multiple new reactors were built. At NRC's annual employee meetings in May, he said it would have "enormous consequences" for NRC, as it would have to significantly increase the number of staffers to handle new plant licensing work while balancing its responsibilities to oversee the existing fleet.—*Jenny Weil, Washington*

Pressurizer heater element error at Palo Verde-3 being scrutinized

The issue of pressurizer heater elements at Palo Verde-3 that didn't meet unit specifications will be closely scrutinized as plant licensee Arizona Public Service Co. (APS), Framatome ANP, and NRC try to get to the bottom of what went wrong and why.

Framatome notified APS June 15 that the Thermocoax elements did not comply with American Society for Mechanical Engineers (ASME) Code requirements, saying that the active heating portion inside each element was roughly 8 inches lower than it should have been. NRC has termed the error a 10 CFR Part 21 problem, saying a potential degraded condition resulted from the pressurizer heater element non-conformance.

"The result of this error is that the active (heating) portion of the element extended into the nozzle area of the pressurizer heater sleeve and the heating effect on the pressurizer sleeve exceeded design, and possibly code allowable temperature," stated a morning report NRC released June 22. It added that an X-ray APS made of a Thermocoax heater element removed from Palo Verde-3 after the element failed showed that the active portion of the heater is longer than previously thought and that some metal temperatures exceeded what was allowed under the ASME Code.

An engineering analysis APS did of the pressurizer after it received the Framatome notice showed that the pressurizer had not been damaged, APS spokesman James McDonald said last week. Though some materials temperatures were high enough to exceed the conservative ASME Code, they were too low to damage the pressurizer, he said. Framatome has provided similar, but not identical, pressurizer

heater elements to Entergy's Waterford-3 and Southern California Edison Co.'s (SCE) San Onofre-2 and -3, according to a June 22 NRC morning report. However, unlike the single-phase, 480-volt heaters at Palo Verde-3, those at Waterford and San Onofre are three-phase, 480-volt heaters, the report stated. It added the electrical connection configurations of the Waterford and San Onofre pressurizer heaters also differed from those designed for Palo Verde. However, Entergy spokeswoman Jill Smith indicated last week the heater elements weren't in place at Waterford-3 long. The utility had installed 29 new Framatome pressurizer heater elements in May during a refueling outage, but tests indicated they might fail and they were replaced, she said. The old pressurizer heater elements, which operated properly, were reinstalled, Smith said.

SCE didn't respond to inquiries on the Thermocox elements supplied to San Onofre. By the time APS received Framatome's notification, the utility had replaced 27 of the pressurizer heater elements, due to five to 10 failures, with General Electric elements, McDonald said. No Thermocox heater elements are in the unit now.

NRC staff will first meet internally to discuss what, if any, possible safety concerns could stem from the error in the Palo Verde-3 elements before contacting Framatome, NRC project manager Omid Tabatabai said June 23. All of the information the agency has received thus far came from APS, he said. Staff will be particularly interested in seeing APS' and Framatome's evaluation reports, he said, noting that the agency will be stressing such questions as to whether the error at Palo Verde-3 resulted from a design program, bad installation, or a fabrication problem. A fabrication problem, for instance, might affect several designs. Tabatabai estimated it could take NRC three months to wrap up its work on the issue.

Framatome, meanwhile, has assembled root-cause and engineering teams to investigate the error at Palo Verde-3 and will "mobilize" staff at the unit, Framatome spokesman Thomas Smith said. The outside dimensions of the pressurizer heater elements Framatome provided and installed at that unit in November matched specifications, Smith said last week. He added the company also will conduct destructive examinations on failed heater elements that had been removed from the unit in an effort to gain further insights. Smith added he was certain Framatome's engineering analysis would factor in the performance of its heater elements at Waterford and San Onofre.

Palo Verde-3 has been off line since it went down May 22 for work on a reactor coolant system pump. The outage was extended so crews could replace the pressurizer heater elements. NRC gave APS the go-ahead for restart June 21 after receiving data supporting the utility's claim Palo Verde-3 has sufficient safety margin. The unit went critical late last week.—*Elaine Hiruo, Washington*

Delay in vessel head replacement at Point Beach growing expensive

The NRC staff and representatives from the Nuclear Management Co. (NMC) were still discussing last week an exigent NMC license amendment request that would allow the company to move a new reactor vessel head on to Point Beach-2.

The reactor vessel head replacement was to have occurred during a 58-day outage that began April 2. But NRC raised concerns about NMC's analysis of heavy loads—the capability of a crane to lift the new, heavier vessel head and the accident consequences if the head were dropped. Wisconsin Electric Power Co. (Wepco), the owner of Point Beach, said that the extended outage past May 30 is costing \$400,000 to \$500,000 a day in replacement power costs. In a filing with the U.S. Securities & Exchange Commission, Wepco said that on high demand days, replacement power costs could reach \$1-million per day. Wepco said actual costs could "vary greatly" from the above estimates, depending on actual system conditions. The utility said it asked and received approval of the Public Service Commission of Wisconsin to defer the post-May 30 costs subject to recovery in future rates.

During June, the NRC staff and NMC representatives have held a series of meeting and conference calls, and, according to sources, have moved closer to an agreement that would allow the new reactor vessel head to be moved into place.

In a June 9 submission to NRC, NMC provided engineering analyses of a vessel head drop done by Sargent & Lundy and by Automated Engineering Services Corp. But so far the NRC staff is apparently still not completely comfortable with NMC's arguments based on engineering judgment. NMC's April 29 amendment application would support a change to the Point Beach final safety analysis report (FSAR) regarding control of heavy loads. NMC needs the NRC's authorization because the company is incorporating into the FSAR an update of the load analysis. The update introduces the possibility of a new accident and therefore requires NRC approval under 10 CFR 50.59, NMC said in the application.—*Michael Knapik, Washington*

RG 1.200 pilot results promising, but industry expects quick benefits

If NRC does not speed up its review of license amendment requests submitted by Regulatory Guide 1.200 pilot plants, other licensees will have little incentive to use the process, an industry representative said at a June 16 meeting with NRC staff.

A trial version of RG 1.200, which specifies criteria for probabilistic risk assessment (PRA) quality in risk-informed regulation, was tested from June 2004 to March 2005 at five pilot plants—Columbia, Limerick, South Texas Project, San Onofre, and Surry (INRC, 18 April, 15). Because the expense to licensees involved in the pilot programs was "not trivial," that cost "has to be balanced by an application that has value" to the industry, Anthony Pietrangelo, senior director for risk regulation at the Nuclear Energy Institute, said at the meeting.

Prompt approval by NRC of the license amendment requests submitted by the pilots is "important to widespread industry application" of RG 1.200, because "when [licensees] perceive that benefits outweigh the costs, they will move forward," he said. Chief nuclear officers "all want to play," but they also "want to know what it will take, how much it will cost, and what the benefit of application is" for implementation of RG 1.200, Pietrangelo emphasized. Industry also expects timely resolution of requests for additional information on the pilot plant license amendment requests, "some of which have been out there over a year," he said. NRC summarized the pilot plant results in a June 8 memorandum, which is available on the agency's Adams document system under accession number ML051590519. NRC staff and contractor review of "the PRA model documentation, industry peer review results, and utility self-assessment report" for each of the five pilots concluded that "industry self-assessment is capable of demonstrating the technical adequacy of PRAs, and peer review is an effective and efficient approach to identifying weaknesses in PRAs," Michael Tschiltz, chief of NRC's probabilistic safety assessment branch, said in the memo.

Guidance to be developed

Though "the pilot program did not identify any specific changes needed to RG 1.200," it did note "some PRA technical elements requiring additional methodological guidance: identification of key sources of uncertainty and key assumptions, use of fault trees to identify the frequency of support

system initiating events, incorporation of phenomenological conditions caused by accidents (e.g., high-energy line breaks) into PRA models, and incorporation of multi-unit interactions into PRA models," Tschiltz said in the memo. Such "guidance could either be developed by staff or by industry, with subsequent staff review and endorsement," he said. NRC staff is "not talking about adding more to standards" already in RG 1.200, but rather providing guidance on their use, "the how-to," said Mary Drouin of NRC's probabilistic risk assessment branch.

NRC staff is "reasonably satisfied, but will make some changes" in RG 1.200 and its accompanying standard review plan, SRP 19.1, Drouin said. These revisions will clarify that "one element of a technically acceptable PRA is that the PRA represents the as-built and as-operated plant" and specify "what risk contributors need to be included in addressing the 'integrated' or 'aggregated' risk from all the desired contributors," Drouin said in her presentation.

Staff also will develop guidance "flags or triggers" that would lead to an audit of a licensee's PRA, Gareth Parry of NRC's division of system and safety analysis said at the meeting.

RG 1.200 issuance expected in June 2006

In September, NEI will submit revisions to its PRA selfassessment guidance for NRC staff endorsement review, Drouin said. In November, NRC staff will issue revision 1 for RG 1.200, including appendices A and B, for a public review and comment period through February 2006. Staff will then revise the regulatory guide before briefing the Advisory Committee on Reactor Safeguards in March or April. In June 2006, NRC will issue RG 1.200 for use. The schedule assumes everything goes "very smoothly and very quickly" and has "no slack in it," Drouin emphasized.

Additionally, there should be a "grace period" before formal implementation of the regulatory guide's requirements, Drouin said. That period is yet to be determined but might be one year, as suggested in staff's phased plan for PRA quality approved by the commission last October (INRC, 18 Oct. '04, 3).

NEI will consolidate input from the pilot plants and submit it to NRC by the end of July, Pietrangelo said at the meeting.—*Steven Dolley, Washington*

NRC expects 28 more power uprate requests by 2010, staff says

An NRC survey of licensees found that 28 units plan to submit power uprate requests by 2010, agency staff said in a June 2 report released last week. If approved, these uprates would increase capacity by approximately 1,379 megawatts electric (MWe).

Power uprate requests for 11 units are under review and, if approved, would result in 905 MWe being added to the nation's generating capacity. Staff "has given the review of power uprates a high priority, as previously directed by the Commission," Executive Director for Operations Luis Reyes said in the report.

Since June 2004, NRC has approved five power uprates, totaling approximately 245 MWe. A total of 105 uprates have been approved since 1977, totaling 4,417 MWe, the equivalent of more than four large nuclear units.

Staff has met its timeliness goals "for all power uprate reviews," with three of the five requests approved in the last year completed "before the licensees' need dates." However, staff only met its goal for staff-hours expended in two of the five reviews. "The key reason the staff exceeded the hourly goals is the quality of the power uprate applications," the report said, noting that "the applications lacked sufficient technical information to allow the staff to decide that safe plant operation will continue after the proposed power uprate."

Entergy Nuclear's application for Waterford-3 (INRC, 18 Oct. '04, 14) "lacked so much technical information that 32 supplements were needed to provide the information required by the staff," the report said.

The staff is developing additional guidance for power uprate reviews, scheduled to be issued by the end of the year, in order "to provide project managers with a comprehensive set of directions" that will "emphasize a pre-application review of each power uprate starting approximately one year before the power uprate application is submitted," the report said.

The staff "continues to be challenged" by steam dryer flow-induced vibration issues at Quad Cities and Dresden (INRC, 16 May, 1), "and by issues associated with extended power uprates currently under review," the report said. "Based on these challenges, the staff is evaluating the need to modify guidance for future power uprate reviews, and the

need to revisit previous reviews of power uprates.”
In fact, concerns about the steam dryer analysis for the Vermont Yankee station is likely to delay completion of that application review by Entergy’s “need date” this fall, the report said.

The report, Secy-05-98, is available on NRC’s Web site at <http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2005/>.—*Steven Dolley, Washington*

Industry advances PRA technology for risk-informed maintenance

Software technology that allows plant operators to perform probabilistic risk assessments (PRAs) in near real-time can facilitate implementation of risk-informed allowable outage times and completion times for system maintenance, industry representatives told an ACRS subcommittee meeting this month.

Initiative 4(b) of NRC's program to develop risk-informed technical specifications "would permit, contingent upon the results of a plant configuration risk assessment, temporary extension of the existing completion time within an LCO [limiting condition of operation] using a quantitative implementation of 50.65(a)(4)," or the maintenance rule, NRC said on its tech specs Web site (<http://www.nrc.gov/reactors/operating/licensing/techspecs/risk-management-techspecifications.html>).

The initiative involves "real-time' calculation of completion times based upon current plant configuration," and would, at plants where it is implemented, "extend completion time from a nominal value up to a predetermined 'backstop' maximum [such as 30 days] using configuration risk management," Tom Boyce, tech spec section chief at NRC's Office of Nuclear Reactor Regulation (NRR), told the reliability and PRA and plant operations subcommittees of the Advisory Committee on Reactor Safeguards at a June 15 briefing. The initiative would allow PRAs to be used to quantify the incremental risk of extending the allowable outage time for a given plant system.

Implementation of 4(b) will include an "approved decision-making process, implementation guidance, requirements for PRA technical adequacy, quantitative configuration and cumulative risk metrics," all of which would be incorporated into the administrative control section of plant-specific tech specs, Boyce said in his presentation. South Texas Project and Fort Calhoun applications to be 4(b) pilot plants are under NRC staff review, and Hope Creek and Prairie Island applications are expected by the end of the year after they "upgrade" their PRAs, Boyce said.

In order for a licensee to take advantage of risk-informed completion times, the plant's PRA must be converted into a configuration risk management (CRM) tool that uses "plant configuration risk results to determine completion times in

near real-time," NRR's Mark Reinhart said at the briefing. These CRM tools, also known as risk monitors, "must be able to reliably assess risk" and will require licensee quality control and NRC review, Reinhart said.

"Every plant has an operating CRM" and industry has acquired "a tremendous amount of experience" with such risk monitors in its implementation of the maintenance rule over the last decade, Biff Bradley of the Nuclear Energy Institute said. "Most aspects of the CRM model are identical to the PRA from which it is derived," to the extent that "at most plants, there is only one PRA," John Gaertner of the Electric Power Research Institute (EPRI) said in his presentation.

"Direct use of the PRA model for CRM, e.g. to populate a 'library' of configuration-specific results, usually requires little or no change to the PRA model," but "development of a dynamic solution CRM model usually requires some model development," Gaertner noted. But such development "has led to enhancements to PRA system models to remove asymmetries, to incorporate initiating event models, [and] to allow multiple configurations with house events," he said in his presentation.

PRA engineers from South Texas Project, San Onofre, and Exelon gave detailed presentations on the capabilities of risk monitor systems currently in use at their plants. Of these plants, only South Texas Project has applied to be a 4(b) pilot plant; the other plants presented to give subcommittee members an impression of the range of technologies available to implement the initiative, Bradley said.

EPRI developed risk management guidelines for the initiative "working closely" with the proposed pilot plants, the Westinghouse Owners Group and NEI's risk-informed tech specs task force, Gaertner said in his May 25 presentation at an NEI workshop in Clearwater Beach, Fla. A revision planned for June is "ready to go out for industry review," and the NEI task force is "coordinating resolution of remaining issues with NRC," Gaertner said. Overall, initiative 4(b) is a "good-news story" and "prospects for successful implementation are promising," he said.

—Steven Dolley, Washington and Clearwater Beach, Fla.

FP&L to seek increase in limit on St. Lucie-2 tube plugging

Florida Power & Light Co. (FP&L) plans to ask NRC to increase St. Lucie-2's steam generator tube plugging limit case the old limit is exceeded before the steam generators can be replaced.

According to NRC staff's June 10 summary of an earlier meeting with FP&L, the utility said St. Lucie-2's 30% plugging limit could be exceeded in its spring 2006 refueling outage, and replacement steam generators won't be available until 2007. Aside from the two steam generators, FP&L plans to replace the unit's reactor vessel head during the fall 2007 refueling outage (Nucleonics Week, 14 Aug. '03, 3).

NRC staff is currently reviewing an FP&L amendment request for tube sleeving, which will be used in conjunction with tube plugging to maintain the total number of plugged tubes below the limit, if feasible, the summary said.

However, as a contingency, FP&L plans to submit a request to raise the tube plugging limit to 42%, with a resultant derating to 89% power, it said. Due to the time required to prepare the supporting analyses, the amendment request will not be submitted until this November, with response needed by April 2006, the summary said.

According to NRC, available resources may be limited since that five-month period includes several holidays. The chances of timely completion of review would ultimately depend on the technical quality of FP&L's submittal, the summary said.

FP&L said the request would closely model its previously approved amendment request that increased the plugging limit to 30%, which should facilitate the review, the summary said.—*Tom Harrison, Washington*

Collecting, sharing information said to be keys to aging management

Collecting and sharing information is crucial to successful nuclear power plant aging management, experts at an international symposium in Dijon, France, agreed last week. But they said the process is threatened by loss of knowledge as industry veterans retire and by a competitive electricity market that inhibits information exchange.

Alongside national databases on equipment performance and degradation are at least two international databases directly applicable to aging issues, the OECD Nuclear Energy Agency's OPDE (Piping Failure Data Exchange) database and the IAEA's SKALTO (Safety Knowledge-base on Aging and Long-Term Operation). But they are incomplete, and some experts reported difficulties in getting utilities to release information on degradation.

The 120 regulators, safety experts, industry representatives and consultants at the symposium titled "Aging Issues in Nuclear Power Plants" June 22-23 had gathered at the invitation of French nuclear safety authority DGSNR. The meeting was organized by DGSNR's NSSS Inspectorate, BCCN, which is located in Dijon.

At the outset of the conference, Katsuji Maeda of the Aging Management Office of Japan's Nuclear & Industrial Safety Agency (NISA), which regulates nuclear power plants, called for establishment of an international aging management database that would integrate information from both regulators and licensees, to make sure that both sides "use the same calculations" and that all data can be shared. But other participants, including those in a closing panel discussion, said the problem is not the collection of data, but learning to use it "intelligently," as Andre-Claude Lacoste, director general of DGSNR, put it.

Lacoste was supported by U.S. NRC Deputy Director of the Office of Nuclear Reactor Regulation William Borchardt, who recalled that before the serious boric acid corrosion of the reactor vessel head at Davis-Besse, "we had a lot of (relevant) operating experience, but not a good integrated process to collect it and distribute it to others." Borchardt said the "clearinghouse" system that the NRC instituted since then to ensure that operating experience is correctly fed back could be adapted to cover equipment management, which encompasses aging management but is broader in scope.

Lacoste also cited the example of containment sump recirculation systems, which were shown to be vulnerable to clogging by an incident in a Swedish BWR in 1992. Some regulatory authorities took action soon thereafter. But some, such as in France, have acted more recently on new information, while others are still "just contemplating" the actions of their peers. "Different authorities don't see things in the same way," he concluded.

Claude Faigy, an expert in Electricite de France's Septen engineering unit, said "there are some databases that are never used at all." He said that it was proving "a challenge" to collect information from utilities concerning piping systems for the OPDE database, and in general utilities subjected to the competitive pressures of a liberalized electricity market are increasingly reluctant to part with any information that could give their competitors an edge, including information on plant equipment degradation.

Ken Brockman, director of Nuclear Installations Safety in the IAEA's Division of Nuclear Safety, argued that utilities should be economically motivated to exchange information on degradation and incidents because "there's nothing more expensive than an unexpected outage." But, he said, that "requires a vision that is longer than the next two years."

Philippe Jamet, deputy director general of France's Institute of Radiological Protection & Nuclear Safety, called it "very serious" that despite the existence of international operating event databases, "you still see repeats" of significant incidents. The same could happen with aging management-related information, Lacoste suggested, if regulators and utilities continue to regard national experience as the reference and relegate foreign experience to a distant second place.

Borchardt also underlined that it's not up to regulatory bodies to constitute and manage operating experience databases, but to utilities, notably because equipment failures are associated with "the business end" of operations. However, Karen Gott of the Swedish Nuclear Power Inspectorate (SKI) said that her organization had been obliged to constitute a national database because there were four utilities operating nuclear power plants in Sweden, each with its own information system.

Brockman said the IAEA and the NEA are working on guidelines to help utilities manage "surprises" at their nuclear power plants, which he said were inevitable. The IAEA has already developed a set of aging management-related

guidelines, including component-specific guidelines for safety-important components that are being maintained and updated. Brockman said member states' experiences were being fed into drafting of safety guides on aging "so everyone can learn from the lesson" of each one.

Non-physical

"Non-physical" issues of aging management also were prominent in the discussions at Dijon, notably the problems associated with the retirement of the first "wave" of plant designers and operators who often hold knowledge that is not recorded anywhere and that could be crucial to aging management.

Members of the International Nuclear Regulators Association (INRA) meeting in Germany two weeks ago focused on the subject of knowledge management, said Lacoste, who belongs to the association. In some countries represented on INRA (which groups chief regulators from Japan, U.S., Canada, Germany, France, Sweden, the U.K. and Spain), he said, "almost one generation is lacking" between those now retiring and young people now being hired. As an example, 36% of the NRC's staff is eligible for retirement in the next five years (see story, p. 1).

Borchardt noted that NRR had hired 50 recent college graduates who he said were "incredibly bright, ambitious and ready to take over." But the challenge, he said, was to "provide (them) with historical basis for why things are the way they are." In the U.S., NRC had begun interviewing senior staff on camera to preserve their knowledge, he said. Noting that the original designers of nuclear plants in operation today are also retiring, Lacoste asked, "Will there be enough time to give the explanation of the design to the next generation?"

Jamet said IRSN had begun to recognize young recruits by giving them management-level titles and responsibilities, and corresponding salaries.

Several participants also stressed the role of research and development (R&D) in attracting young talent to the nuclear industry, including regulatory organizations.

Disappearance of original suppliers and obsolescence of components are also non-physical aspects of aging management, Lacoste's deputy Alain Schmitt pointed out. EDF has instituted special programs to keep essential suppliers afloat, stockpile components that can't be replaced, or change systems whose components are slated to die out.

LR versus PSR

Bezdikian also addressed a question that often emerges in international discussions of nuclear power plant life management: the difference between license renewal as practiced in the U.S., and the periodic safety review (PSR) that is the norm in Europe.

He said there are three different basic strategies. The first stems from the U.S. licensing system featuring original operating licenses limited to 40 years and renewals of 20 years. South Africa follows that approach, Bezdikian said.

Countries without limited-time operating licenses generally have adopted the PSR approach, in which licensees must essentially relicense their plants every 10 years. The third category encompasses countries that need license renewal procedures after original and basic design lifetime—typically 30 years—and then PSR for plant life extension. They include Japan, Korea, the Russian Federation, and Ukraine, Bezdikian said. In Japan and Korea, the original lifetime of 30 years has been extended to 60 years, with PSR approval needed every 10 years between 30 and 60 years' operation. In Russia, the original lifetime of 30 years can be extended to 45 years for the oldest generation of VVER plants and to 60 years for the new generation. PSRs are needed every five years for the oldest plants, and every 10 years for the newer ones, he said.

But the IAEA's review had shown "no competition between license renewal and PSR" in the kinds of demonstrations required by safety authorities, he said.

Lacoste said it had been DGSNR's aim in organizing the symposium to stimulate debate on plant life extension and aging management, notably regulatory aspects, to promote "better understanding" internationally of how different countries approach the issue.

"Uniformity is a meaningless aim," he affirmed. "Of course we will keep our national specificities for the coming decades, at least. But if we don't do the same thing, we must know why."—*Ann MacLachlan, Dijon*

Donald C. Cook Nuclear Plant

License Renewal Presentation to ACRS

Richard Grumbir
Indiana Michigan Power Company
July 6, 2005



AEP - America's Energy Partner

Introduction

- Description of Cook Nuclear Plant
- Asset Management
- Ice Condenser containment
- System Walkdown
- TLAA
- Implementation
- Commitments

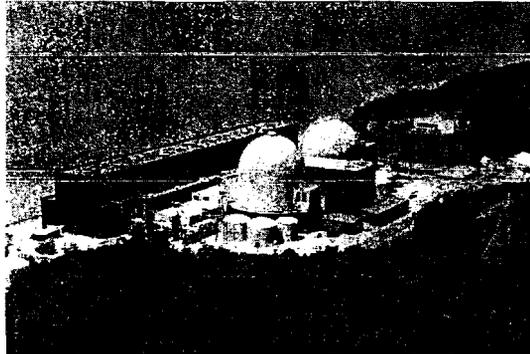


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Description of Cook Nuclear Plant

3

- Located in southwest Michigan
- Westinghouse 4-loop PWR
- Initial operation 1974 (U1) & 1977 (U2)
- A/E AEP
- Ice condenser containment
- Unit capacity (MWt/MWe) –
 - Unit 1 (3304/1044)
 - Unit 2 (3468/1117)
- Four emergency diesel generators (2 per unit)
- Once-through cooling – Lake Michigan ultimate heat sink
- 18M fuel cycle



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Plant Improvements

4

Nuclear Asset Management plan through 2037

Completed

- Unit 2 S/G replacement – 1988
- Unit 1 S/G replacement – 2000
- Appendix K MUR Uprate – 2002/2003
- Reserve Aux transformers - 2002/2003
- Traveling Water Screens – 2005 (Innovative design – NEI-TIP award)
- Unit 1 Main Transformer - 2005

In Progress

- Conversion to ITS – 2005 (ITS SER May, 2005; Implement Sept 2005)
- Supplemental diesel generators – 2005
- Reactor head replacement – 2006/2007
- GSI-191 Sump Strainers – 2006/2007

Future plans (under evaluation)

- Stretch Power Uprate
- Moisture Separator upgrades
- Unit 2 Main Transformer
- Main Generator rewinds

- Unit 1 Turbine rotor replacement – 2006
- INDUS Asset Suite - 2006
- Digital turbine controls – 2006/2007

Estimated completion dates – (Unit 1/Unit 2)

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Ice Condenser

5

- **Major in Scope components**
 - Various deck doors, including frames
 - Turning vanes
 - Lower support structure
 - Wear slab and support slab
 - Curtains (intermediate & upper decks)
 - Bridge crane and supports
 - Fasteners
 - Ice baskets



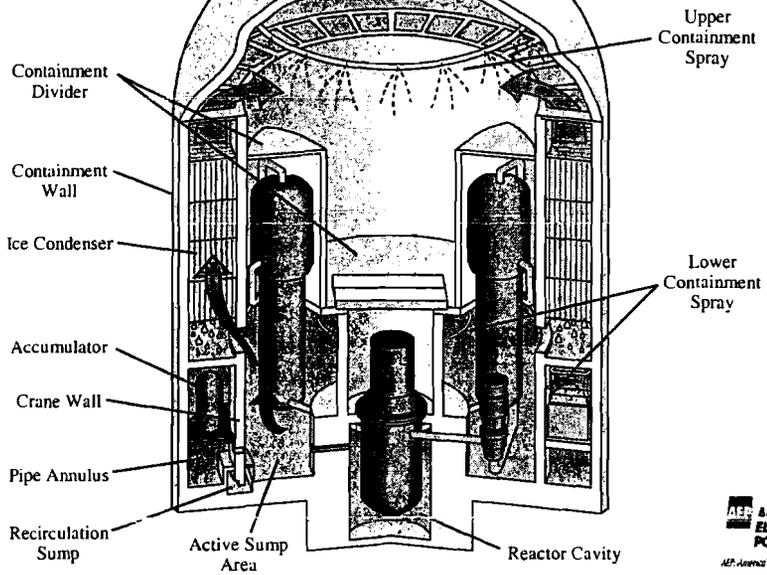
Ice Condenser

6

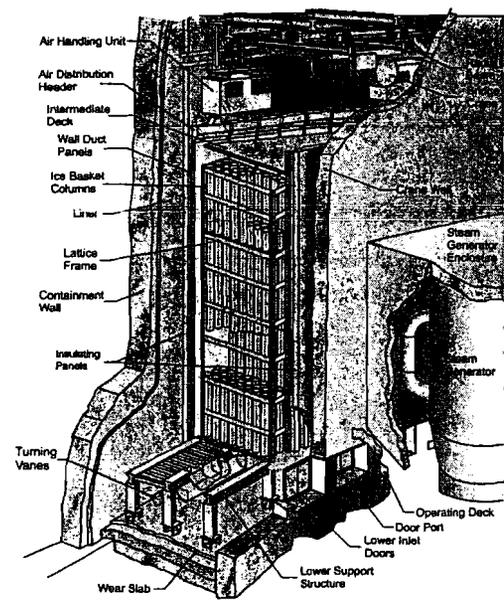
- **Surveillances**
 - ice weight, boron concentration, pH
 - flow passages
 - doors (top deck, intermediate deck, lower inlet)
 - flapper valves
- **Maintenance activities**
 - ice basket emptying, inspection, refilling
 - flow passage cleaning
 - Doors, door seals, airbox inspections
- All procedurally driven



Ice Condenser



Ice Condenser



System Walkdown Program

9

- **Scope and activities credited in LRA consistent with previous applicants**
- **Enhancements include:**
 - Emphasizing scope of walkdowns
 - nonsafety-related affect on safety-related
 - inspections of infrequently accessed areas
 - Changing environment conditions addressed
 - Administrative Controls
- **System Engineering Effectiveness**



Reactor Vessel Neutron Embrittlement

10

- **TLAA used fluence values at 48 EFPY**
- **With a capacity factor of ~97% from now through the period of extended operation, Cook units will not exceed 48 EFPY**
- **48 EFPY is acceptable for Cook**
- **Fluence values submitted in the LRA are conservative**



Implementation

11

- **46 Total Aging Management Programs (AMPs)**
 - 18 Programs- No Enhancements
 - 16 Programs Require minor Enhancements
 - 12 New Programs
 - Draft procedures in review by site personnel
- **18 of 28 remaining AMPs ready by end of 2005**
- **Most remaining programs (after 2005) awaiting technology or industry developments**
- **Internal Goal- All AMPs ready by 2009**



Commitments

12

- **LR Commitments tracked in both CNP's commitment management system (CMS) and the Corrective Action Program.**
 - Commitment implementation includes annotation in implementing procedures.
- **Commitment management program is consistent with NEI guidance (94-01)**
- **Implementation oversight attributes:**
 - Turnover plans include assignment of a LR program owner
 - Program owners have received LR training, participated in reviews of LRA, and supported NRC regional inspections
 - Closure of actions requires review by LR program owner
 - Most commitments scheduled to be implemented by LR project
 - Annotation of LR attributes being incorporated into procedures



Closing Remarks

- LR process provided systematic opportunity to refine station processes to account for aging effects
- Implementation activities are on target for internal goal to be completed by 2009, five years prior to period of extended operation
- Commitments adequately being tracked for implementation
- I&M is committed to safe, reliable long-term operation of Donald C. Cook Nuclear Plant



**Advisory Committee on Reactor
Safeguards (ACRS) License Renewal Full
Committee**

**Donald C. Cook Nuclear Plant, Units 1 & 2
License Renewal Application**

**Safety Evaluation Report
July 6, 2005**

**Jonathan G. Rowley
Safety Project Manager**

Overview

- Safety Evaluation Report (SER) with Open Items issued on December 21, 2004
 - Contained two (2) Open Items and two (2) Confirmatory Items
- Final SER issued on May 29, 2005
 - Open and Confirmatory Items resolved
 - Staff concluded that CNP LRA has met the requirements of 10 CFR Part 54

July 6, 2005

ACRS Full Committee Meeting –
Donald C. Cook Nuclear Plant, Units 1 and 2

2

Section 2 Overview

(Structures & Components Subject to an AMR)

- Scoping and screening review results found that the structures, systems, and components within the scope of license renewal, as defined by 10 CFR 54.4(a) and those subject to an AMR, as defined by 10 CFR 54.21(a)(1), have been identified.
- Items brought into scope:
 - Insulation – Pipe and Penetrations
 - Emergency Diesel Generator (EDG) Exhaust Silencers
 - Auxiliary Feed Water (AFW) Suction Strainers
 - EDG Air distributor housings
 - Spent Fuel Pool (SFP) Makeup Supply – Refueling Water Storage Tank (RWST)

July 6, 2005

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Donald C. Cook Nuclear Plant, Units 1 and 2

3

Section 3 Overview

(Aging Management Review Results)

Auxiliary System

- Open Item
 - Use of System Walkdown Program to manage aging effects on internal surfaces of 10 CFR 54.4(a)(2) component types.
- Issue resolution
 - The applicant provided information to demonstrate that, in addition to System Walkdown, aging effects on internal surfaces will be effectively managed by a combination of four additional AMPs:
 - Flow-Accelerated Corrosion
 - Service Water System Reliability
 - Water Chemistry Control
 - One-Time Inspection

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Donald C. Cook Nuclear Plant, Units 1 and 2

4

Section 3 Overview

Flow-Accelerated Corrosion (FAC)

- Open Item
 - FAC Program basis for expansion of testing for wall thinning not consistent with GALL
 - GALL – measured wall thickness less than predicted
 - LRA – measured wall thickness less than threshold criteria
- Issue resolution
 - AMP revised to state consistent with GALL with exception regarding use of threshold value

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5

Section 3 Overview

Service Water System Reliability

- Service Water System Reliability Program to be used to check for selective leaching during visual inspections.
- GALL recommends hardness testing or other acceptable physical test in addition to the visual inspection.
- The applicant committed to enhance the program to include hardness testing or an equivalent physical test.

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6

Section 3 Overview

Buried Piping Inspection

- Multiple excavations of underground piping between Feb. 2001 and Feb. 2003 included carbon steel fire protection water and station drain water.
- CNP anticipates more digs and additional inspections between now and the period of extended operation of the same type of piping.
- Licensee committed to enhance the Buried Piping Inspection Program to require an inspection of in scope buried piping within ten years of entering the PEO, unless an opportunistic inspection has occurred within this ten-year period.

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7

Section 3 Overview

- Below grade soil/water environment non-aggressive

Sample	Aggressive limits	Sample Date	DC Cook Sample Well 1A	DC Cook Sample Well 12
pH	<5.5	03/004/1976	6.4	7.8
		01/015/2002	7.1	7.4
Chloride (ppm)	>500 ppm	03/004/1976	20.3	9.7
		01/015/2002	10	12
Sulfate (ppm)	>1500 ppm	03/04/1976	18.1	310.3
		01/015/2002	134	67

July 6, 2005

ACRS Full Committee Meeting –
Donald C. Cook Nuclear Plant, Units 1 and 2

8

Section 4 Overview

(Time-Limited Aging Analyses (TLAA))

- Applicant and staff calculations demonstrate the Charpy Upper Shelf Energy (USE) acceptance criterion for the limiting beltline material will be met through the end of the period of extended operation.

Limiting Material For USE	USE Acceptance Criterion (ft-lb)	Calculated USE values (ft-lb) 48 EFPY	Conclusion
Intermediate/lower shell circumferential weld (Unit 1)	50	57	Criterion is met for 48 EFPY
Intermediate shell plate (Unit 2)	50	67	Criterion is met for 48 EFPY

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9

Section 4 Overview

- The applicant's and staff's calculations for Reference Temperature Pressurized Thermal Shock (RT_{PTS}) demonstrate the screening criterion for the limiting beltline RV material will be met through the end of the period of extended operation.

Limiting Material for PTS	Screening Criterion	Calculated RT_{PTS} values 48 EFPY	Conclusion
Intermediate/lower shell circumferential weld (Unit 1)	300 °F	283 °F	Screening Criterion is met
Intermediate shell plate (Unit 2)	270 °F	227 °F	Screening Criterion is met

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Donald C. Cook Nuclear Plant, Units 1 and 2

10

Section 4 Overview

- **Confirmatory Items**
 - Update the updated final safety analysis report (UFSAR) Supplement to include commitments to evaluate component fatigue analyses
- **Issue resolution**
 - Applicant provided the updated UFSAR Supplement discussion of commitment to perform additional actions to address fatigue

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Donald C. Cook Nuclear Plant, Units 1 and 2

11

Staff Conclusions

- Actions have been identified and have been or will be taken such that there is reasonable assurance that activities will continue to be conducted in the renewal term in accordance with the current licensing basis.
- The applicant has met the requirements for license renewal, as required by 10 CFR 54.29(a).

July 6, 2005

ACRS Full Committee Meeting -
Donald C. Cook Nuclear Plant, Units 1 and 2

12

North Anna Early Site Permit Application

Briefing to
Advisory Committee on
Reactor Safeguards
July 6, 2005



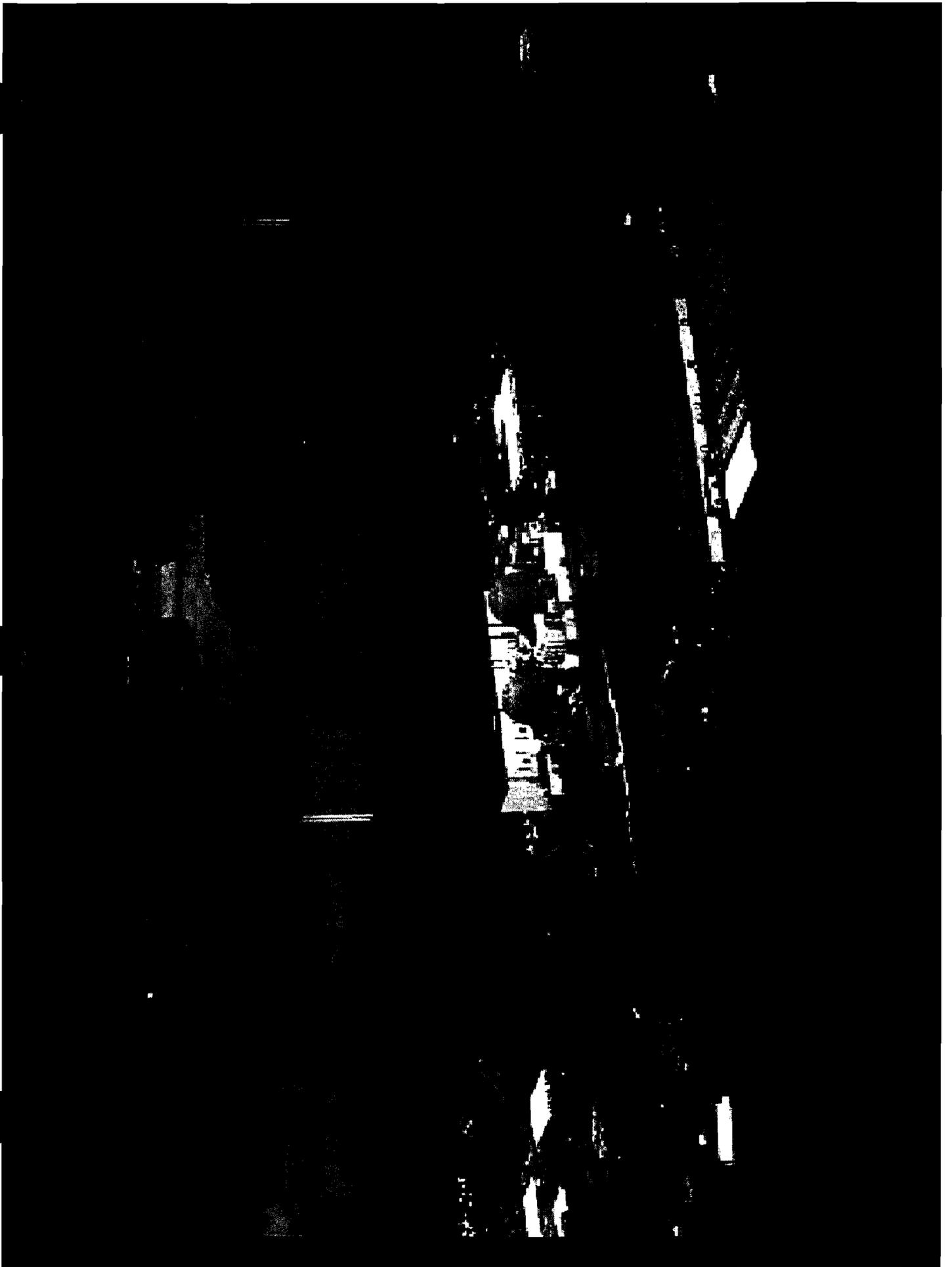
Purpose for Submitting North Anna ESP Application

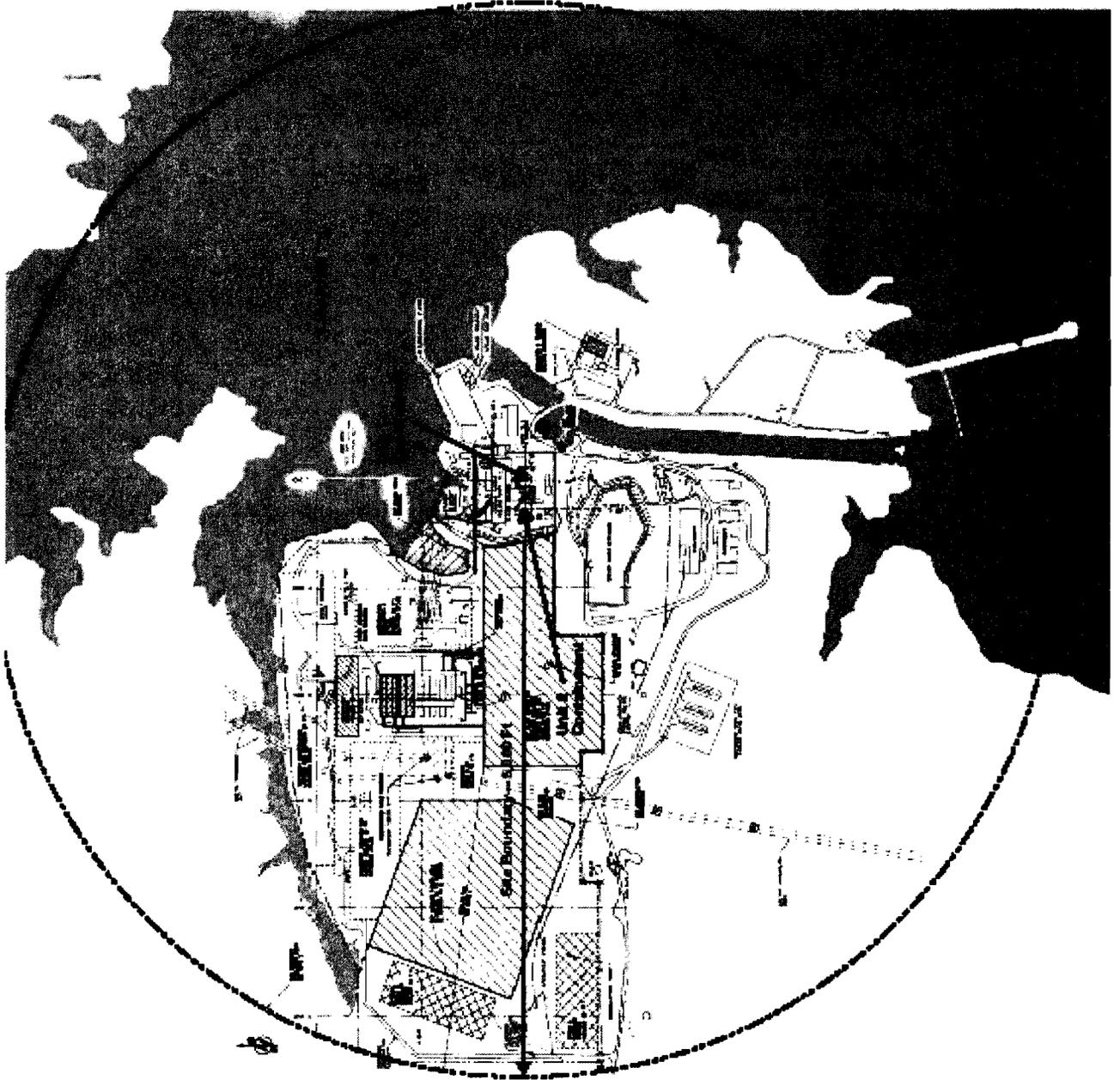
- Determine site suitability
- Resolve siting issues early
- Defer technology decision until justified by business case
- Test the regulatory process
- Keep nuclear option open

North Anna Power Station

- Originally a four unit site
- Units 1 and 2 actually built
 - Westinghouse 3-loop PWRs
- Operating licenses issued in 1978 and 1980
- Construction permits issued for Units 3 and 4
- Units 3 and 4 partially constructed, then cancelled and demolished







ESP Application Milestones

Submitted ESP Application	Sept. 2003
Revision 1	Oct. 2003
Revision 2	July 2004
Revision 3	Sept. 2004
NRC Issued Draft SER	Dec. 2004
ACRS Meeting on Draft SER	March 2005
Response to DSER Open Items	March 2005
Revision 4	May 2005
NRC Issued Final SER	June 2005



North Anna SER

	Draft SER December 2004	Final SER June 2005
Permit Conditions	18	8
Action Items	19	30
Confirmatory Items	1	0
Open Items		
Introduction	1	0
Geology	4	0
Hydrology	11	0
Seismic	2	0
Emerg. Prep.	10*	0
TOTAL	28	0

* Eight of the open items previously addressed



Most Open Items Resolved by Providing Additional Information

- 2.3-1 Wind speed
- 2.3-2 Snow pack
- 2.3-3 UHS water freezing
- 2.3-4 Unit 4 atmospheric impacts
- 2.4-1 Coordinate system
- 2.4-3 Low-flow lake conditions
- 2.4-4 Ice jams and ice dams
- 2.4-7 Long-term ground water level measurements
- 2.4-8 Hydraulic conductivity
- 2.4-9 Hydraulic gradients
- 2.4-10 Hydraulic gradient seasonal variation
- 2.5-1 Seismic modeling
- 13.3-1, -2, and 4-10 Emergency preparedness

Other Open Item Resolution

2.1-1 Exclusion Area Control

- Resolved via proposed license condition

2.4-2 Minimum Distance

- Existing units' and new construction processes ensure no adverse interactions

2.4-5 Minimum Lake Water Temperature

- Resolved via new site characteristic

2.4-11 Adsorption/Retention Coefficient

- Resolved via proposed license condition



Other Open Item Resolution

2.4-6 UHS Reliability and Stability

- The UHS would be designed to resist uplift pressure, including an appropriate factor of safety
- COL action item assigned

2.5-2 SSE Shear Wave Factors

- Resolved via new site characteristic

13.3-3 Emergency Facilities

- Major feature withdrawn



SER Accomplishments

- Site characteristics established
 - Based on site investigation, exploration, analysis and testing
 - Defined in FSER Appendix A.3
- Summary of characteristics
 - Defines site boundaries [EAB, LPZ, Low Population]
 - Site Meteorology including characteristics important to plant design and to calculation of radiological impacts
 - Hydrology, geology, seismology, and geotechnical engineering characteristics for plant design
- Compared at COL to demonstrate that the selected plant design is acceptable



SER Accomplishments

- **Bounding Plant Parameter Values Defined**
 - Initially selected to bound a variety of technologies
 - Compared at COL to the actual selected technology
 - Additional justification and NRC review required to show that regulatory requirements are satisfied if actual design parameter is greater than ESP bounding assumption
- **Criteria for selection of ESP permit conditions discussed in FSER Section 1.8**
 - Clear basis for NRC permit conditions/action items
 - ESP permit conditions not necessary when an existing regulation requires future review and approval

Observations

- **Met schedules**

- Hard work
- Good communications

- **EP “Major Features” Option**

- Value uncertain
- Good “warm-up” for COL

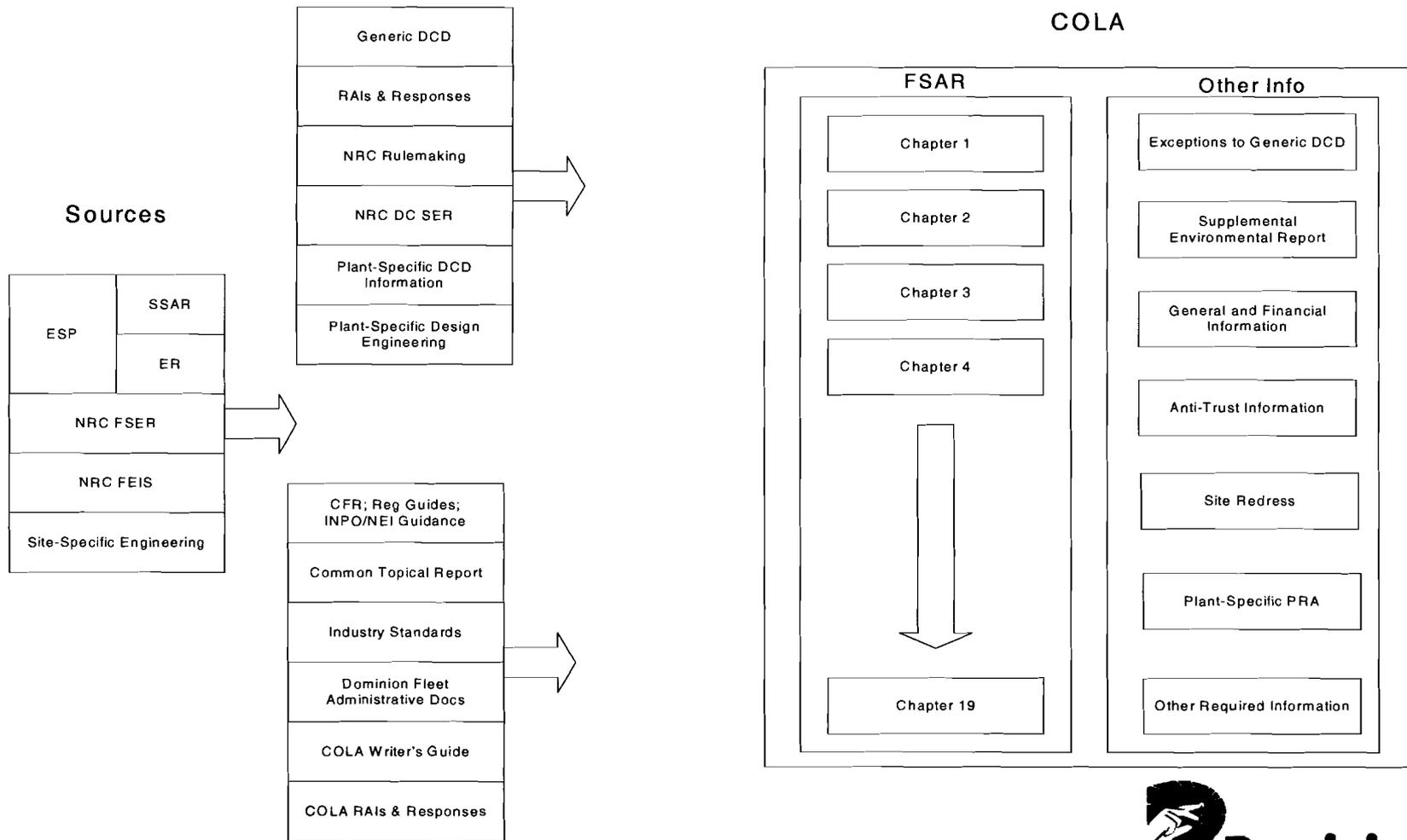
- **PPE approach worked**

- Specify fewer parameters to describe plant

- **Lessons learned for future applications**



Next Step...More Complex





Dominion[®]

Item 3, 2nd handout, by MRR



Press Release Approval of the Nevada Site

U.S. Nuclear Regulatory Commission

July 6, 2005

Presented by: Belkys Soz
NRRP/DRIP/NRR



Purpose / Success

- **To provide the ACRS an overview of the North Anna early site permit (ESP) safety review's conclusions, the permit conditions recommended by the staff, the combined license (COL) action items, and the bounding parameters listed in the final safety evaluation report (SER)**

- **Success**
 - **The ACRS gains an understanding of the conditions and limitations recommended by the staff for inclusion in any ESP that might be issued in connection with the North Anna site ESP application and the COL action items identified in the SER**



Meeting Agenda

AGENDA

North Anna ESP Safety Review / Conclusions	5 min
Key Review Areas / Resolution of Open Items	5 min
Permit Conditions	5 min
COL Action Items and Bounding Parameters	5 min
Summary / Next Steps / Questions	5 min



North Anna ESP Safety Review

- The Final SER documents the staff's technical review of the site safety analysis report and emergency planning information submitted by the applicant for the North Anna ESP site
- The staff's review verified the applicant's compliance with the requirements of Subpart A of 10 CFR Part 52 and 10 CFR Part 100
- The applicant's exclusion area is acceptable and meets the requirements of Part 100, subject to the limitations and conditions identified in the final SER
- The proposed site is acceptable for constructing a plant falling within the plant parameter envelope (PPE) with respect to radiological effluent release dose consequences from normal operation



North Anna ESP Safety Review

- With respect to aircraft hazards the proposed site is acceptable for constructing new units falling within the applicant's PPE
- Physical characteristics of the site are such that adequate security plans and measures can be developed
- The applicant demonstrated that no physical characteristics unique to the proposed ESP site could pose a significant impediment to the development of emergency plans and the staff finds the proposed major features of the emergency plan acceptable
- Based on the applicant's request, major feature H was not evaluated and the staff reached no conclusion regarding the acceptability of major feature H



North Anna ESP Safety Review

- The applicant provided an acceptable description of current and projected population densities in and around the site and properly specified the low population zone (LPZ) and population center distance
- The staff's review verified the radiological consequences of bounding design-basis accidents at the exclusion area boundary (EAB) and outer boundary of the LPZ meet the requirements of 10 CFR 52.17
- The staff concludes that the applicant's proposed site characteristics related to climatology and the methodologies used to determine the severity of the weather phenomena reflected in these site characteristics are acceptable and contain margin sufficient for the limited accuracy, quantity, and period of time in which the data have been accumulated



North Anna ESP Safety Review

- The applicant has made conservative assessments of post-accident atmospheric dispersion conditions using its meteorological data and appropriate diffusion models and the staff concludes that the short-term atmospheric dispersion estimates are acceptable and meet the requirements of 10 CFR Part 100
- The staff will address atmospheric dispersion estimates used to evaluate radiological doses for the control room in its review of any COL or construction permit (CP) application that references this ESP
- The staff concludes that the applicant's characterization of long-term atmospheric transport and diffusion conditions is appropriate for use in demonstrating compliance with dose requirements in Appendix I to Part 50



North Anna ESP Safety Review

- The staff concludes that the applicant's proposed site characteristics related to hydrology are acceptable with the noted conditions
- The staff concludes that the proposed ESP site is acceptable from a geology and seismology standpoint and meets the requirements of 10 CFR 100.23
- The applicant has provided appropriate quality assurance measures equivalent to those required by 10 CFR Part 50 Appendix B



Key Review Areas

- The staff completed its review in the following areas:
 - **Exclusion Area Authority and Control (1)**
 - Nearby Industrial, Transportation, and Military Facilities
 - **Meteorology (4)**
 - **Hydrology (11)**
 - **Seismology and Geology (2)**
 - Radiological Effluent Release Dose Consequences from Normal Operations
 - Aircraft Hazards
 - **Emergency Planning (10)**
 - Industrial Security
 - Accident Analyses
 - Quality Assurance
- There were 28 Open Items in the Draft SER (**Bold**)
- Resolution of all Open Items discussed in the Final SER



Permit Conditions

- There are 8 proposed Permit Conditions in the Final SER from 18 in the Draft SER
- Permit Conditions included under 3 circumstances
 - Staff's evaluation rests on an assumption that is practical to support only after ESP issuance
 - A site physical attribute exists that is not acceptable for the design of Systems, Structures, and Components important to safety
 - Staff's evaluation requires a future act



Proposed Permit Conditions

1. Obtain and execute agreements providing for shared control of the North Anna ESP exclusion area, including State approvals before construction begins under a CP or COL referencing the ESP
2. ESP holder obtain the right to implement the site redress plan before undertaking limited work activities
3. Requires the fourth unit use a dry cooling tower system during normal operation
4. Requires the new units radwaste systems be designed with features to preclude any and all accidental releases of radionuclides into any potential liquid pathway



Proposed Permit Conditions

-
5. Replace fractured/weathered rock at the foundation level with lean concrete before initiation of foundation construction
 6. Prohibits the use of an engineering fill with high compressibility and low maximum density, such as saprolite
 7. Perform geologic mapping of future excavations for safety-related facilities
 8. Improve Zone II saprolitic soils to reduce any liquefaction potential if safety-related structures are to be founded on them



COL Action Items

- There are 30 COL Action Items in the Final SER from 19 COL Action Items in the Draft SER
- COL Action Items included to
 - Ensures that significant issues are tracked and considered during the COL phase
 - Identify issues that shall be addressed by an applicant who submits an application referencing the North Anna ESP



Bounding Parameters / PPE

- Controlling PPE value that necessarily depends on a site characteristic
- Review the design selected in COL or CP application to ensure the design fits within the bounding parameter values
- Otherwise, the COL or CP applicant would need to demonstrate that the design, given the site characteristics in the ESP, complies with the Commission's regulations
 - Maximum Cooling Water Flow Rate – Unit 3 = 2540 cfs
 - Maximum Cooling Water Temperature Rise = 18 F
 - Maximum Inlet Temperature = 95 F
 - Minimum Site Grade = 271 ft MSL



Project Milestones

- Receive North Anna ESP application – September 25, 2003
- FRN published announcing acceptance – October 30, 2003
- FRN published for mandatory hearing – December 2, 2003
- Draft SER issued – December 20, 2004
- Open Items Resolution January 2005 – May 2005
- ACRS Meeting on Draft SER – March 3, 2005
- ACRS Interim letter to the EDO – March 11, 2005
- Receive Revision 4 of Application – May 16, 2005



Project Milestones

- Green ticket Response to ACRS – June 3, 2005
- Final SER Issued – June 16, 2005
- ACRS Meeting on Final SER – July 6, 2005
- ACRS Letter to the EDO – July 25, 2005
- Final SER Issued as NUREG – August 29, 2005



North Anna ESP Summary

- On June 16, 2005, NRC issued a first-of-a-kind Final SER for the North Anna ESP application
- The North Anna ESP site characteristics with the limitations and conditions proposed by the staff comply with Part 100 requirements
- Reactor(s) having characteristics that fall within the parameters identified in the ESP, and which meet the terms and conditions proposed in the final SER, can be constructed and operated without undue risk to the health and safety of the public
- Issuance of the North Anna ESP will not be inimical to the common defense and security or to the health and safety of the public
- Questions or comments?



Overview of DG-1137 — Guidelines for Lightning Protection of Nuclear Power Plants

Christina E. Antonescu
Engineering Research Applications Branch
Division of Engineering Technology
Office of Nuclear Regulatory Research
(301) 415-6792
ceal@nrc.gov

Roger A. Kisner
Richard T. Wood
Oak Ridge National Laboratory
(865) 574-5567 (865) 574-5578
kisnera@ornl.gov woodrt@ornl.gov

Presented to
Advisory Committee on Reactor Safeguards
Rockville, Maryland
July 6, 2005



Purpose of Briefing

- Discuss draft regulatory guide with ACRS
 - Motivation
 - Approach
 - Technical need for guidance
 - Overview of draft guide DG-1137
 - Responses to public comments
- Request concurrence to issue the draft guide



DG-1137 Provides Needed Guidance for New Plant License Applicants

- Responds to NRR User Need Request 2002-017
- Consensus lightning protection practices have evolved since NFPA-78 was issued [referenced by NUREG-0800, Chapter 7.1]
- No regulatory guidance on lightning protection exists
- Comprehensive guidance can ensure adequacy and consistency of lightning protection approaches employed for new plants



Development of Technical Basis Involved a Systematic Approach

**LERs, NRC Inspection Reports,
and Industry Reports**

**Industry
Standards
(IEEE)**

**Confirmatory
Research and FMEA**

**Measurement
and Analysis**

**Accepted
Practices**

**NUREG/CR-6866 "Technical Basis for Regulatory Guidance on
Lightning Protection in Nuclear Power Plants"**

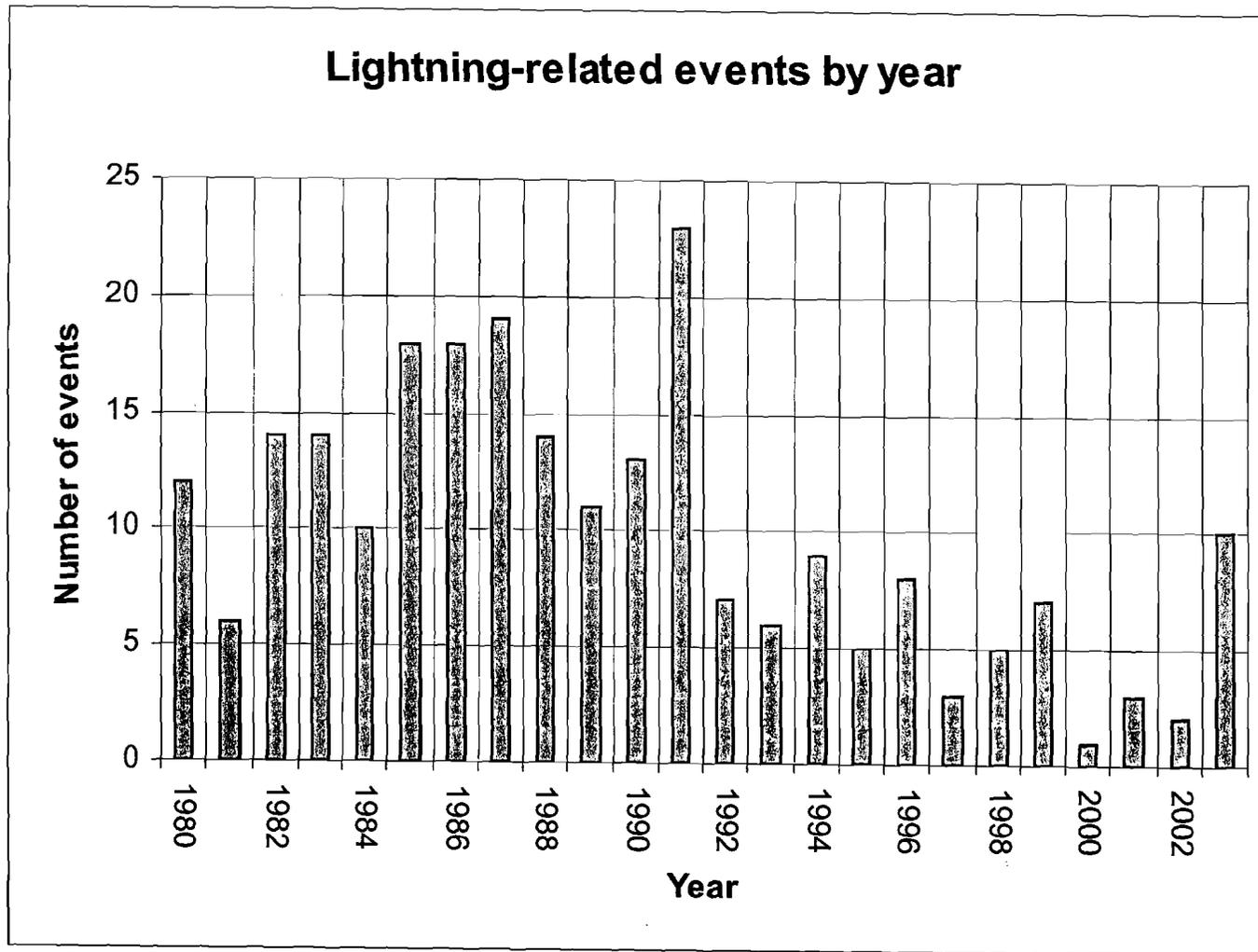


LER Data Related to Lightning Events Were Reviewed

- Two Studies (240 events over 24 years)
 - NRC (Rourke 1980-1991), 174 events
 - ORNL 1992-2003, 66 events
- Significant findings
 - Local strikes are the source of most events
 - Transients from transmission lines typically do not propagate directly into plant (have resulted in LOOP)
 - 32% resulted in a reactor trip
 - 27% resulted in loss of offsite power
 - 60% resulted in equipment malfunction
 - Results show lightning occurrences impact plant availability and can challenge plant safety systems



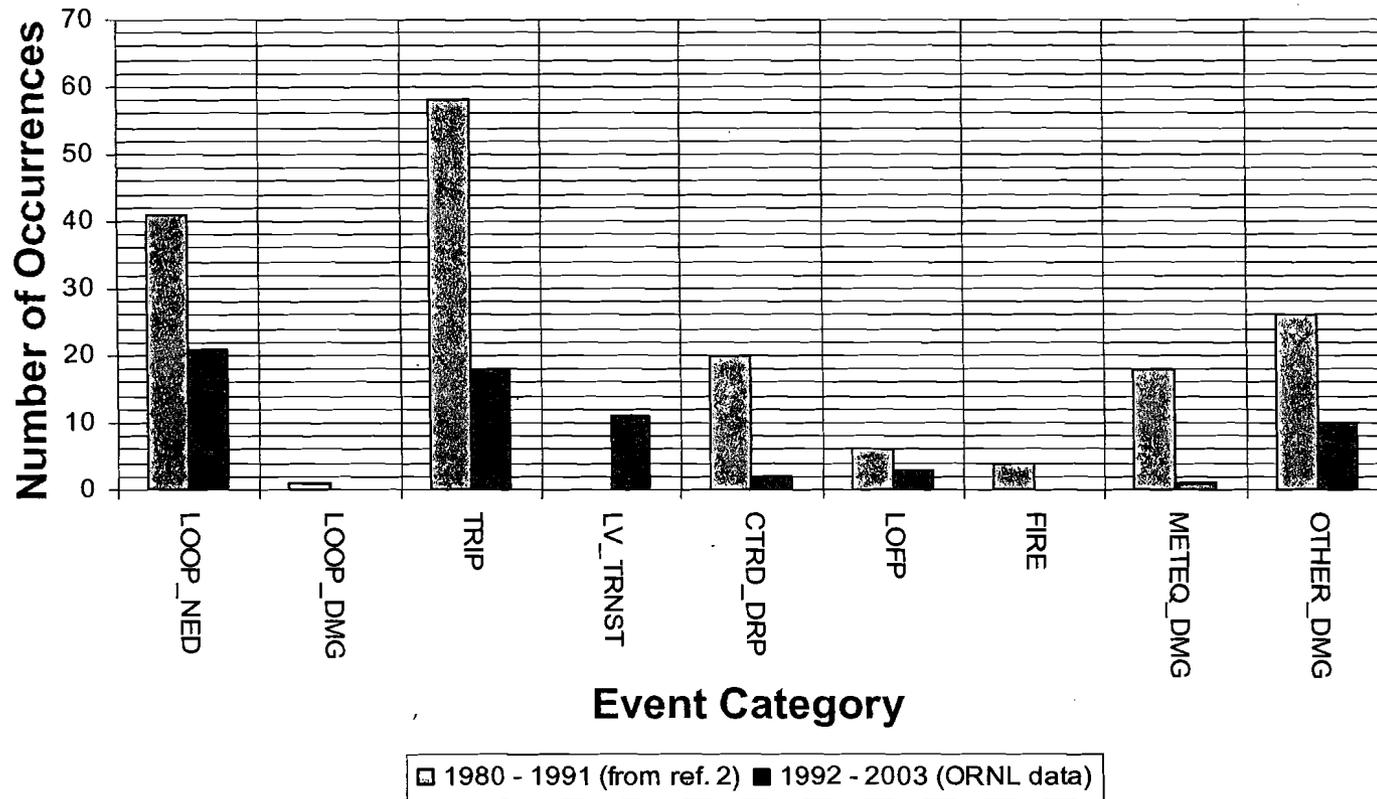
Merged Data from Two Studies Shows Overall Decline in Lightning-Related LER Events from 1990 to 2003





Reactor Trip and LOOP Are Dominant Events

Lightning-related events for two 12-year periods
(1980-1991, 1992-2003)



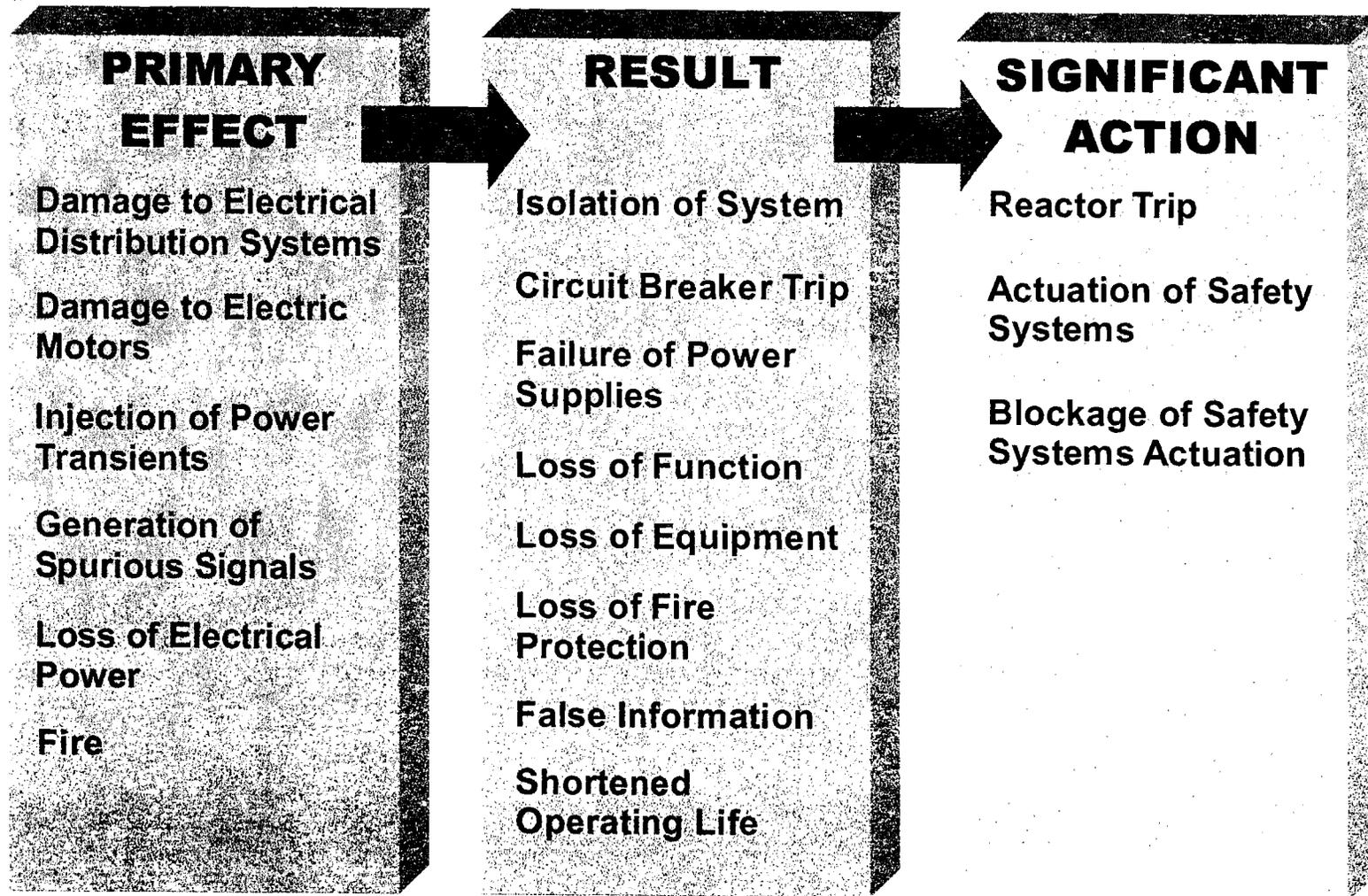


Review of Operating Experience Shows That Lightning Can Pose a Risk to NPP Facilities

- Lightning contributes to a significant number of loss of off-site power events
- Lightning can result in loss of fire protection and may initiate a fire
- Lightning can cause a reactor trip, accompanied by random system and component misoperation (inadvertent system actuations) and failures
- NUREG/CR-6866 documents operating experience



Possible Consequences of a Lightning Strike



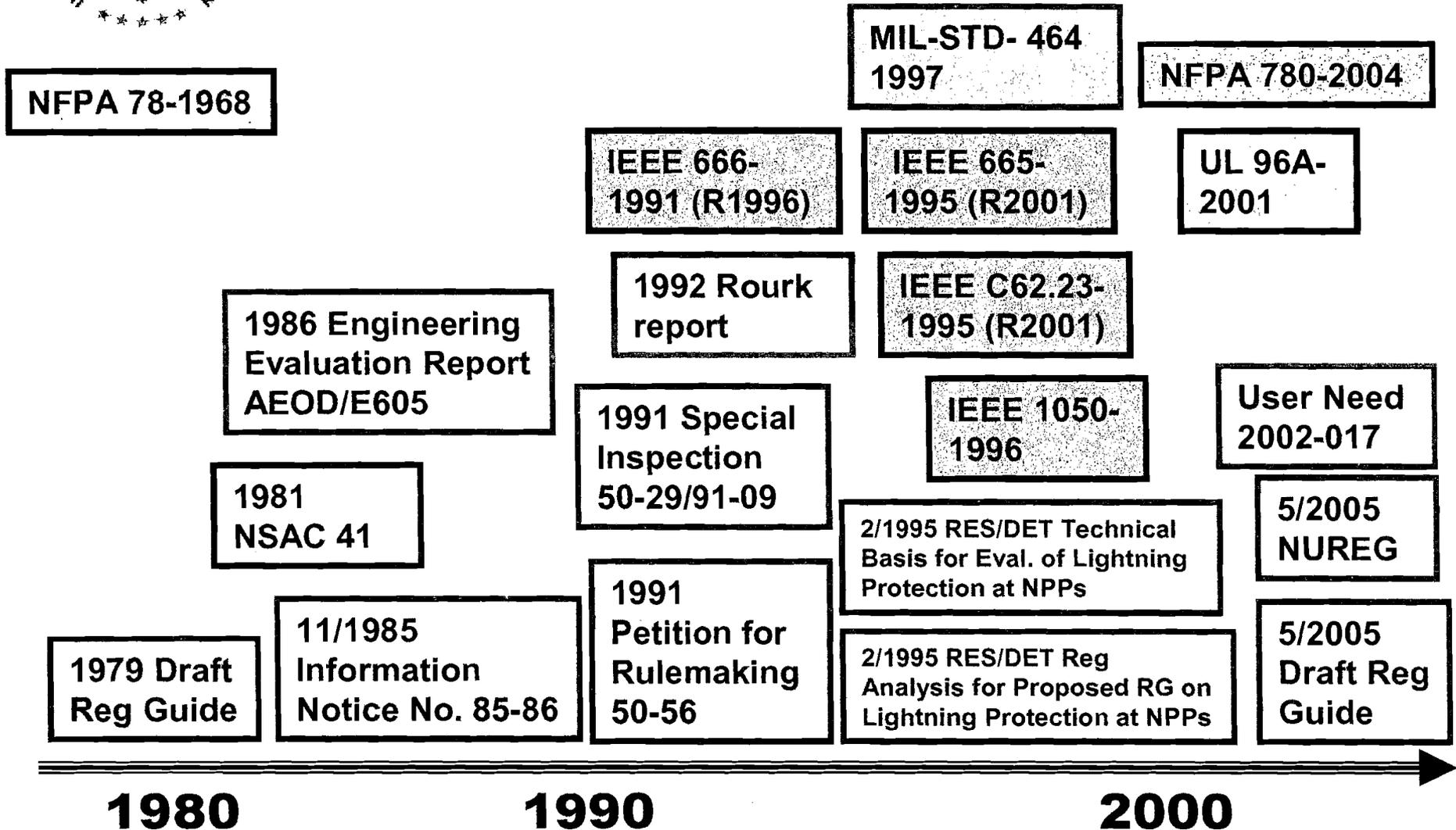


Additional Considerations for Guidance on Lightning Protection

- Nuclear power plants see widespread use of digital and low-voltage analog electronic systems
- Electrical/electronic components can fail due to transients
- Current electronic devices are more vulnerable than earlier vintages
- Current NRC regulatory guidance on electromagnetic compatibility presumes a normal surge environment



Lightning-Related Activities Over Last 20 Years





Industrial Guidance on Lightning Protection Comes from NFPA and UL

- NFPA 780-2004, Standard for the Installation of Lightning Protection Systems
 - Facility protection guidance and philosophy
 - Virtually all lightning protection standards reference it
 - *Excludes* electric generation facilities
- Underwriters Laboratories UL 96A-2001, Installation Requirements for Lightning Protection Systems
 - Facility protection installation practice
 - *Excludes* electrical generating, distribution, and transmission systems
- Focus is on fire prevention and personnel protection



Overview of DG-1137 — Guidelines for Lightning Protection of Nuclear Power Plants



DG-1137 Describes Acceptable Practices for Design and Qualification Related Requirements in 10 CFR Part 50

- General Design Criterion 2: Protection against natural phenomena
- General Design Criterion 3: Protection against fire
- General Design Criterion 17: Electric power system requirement

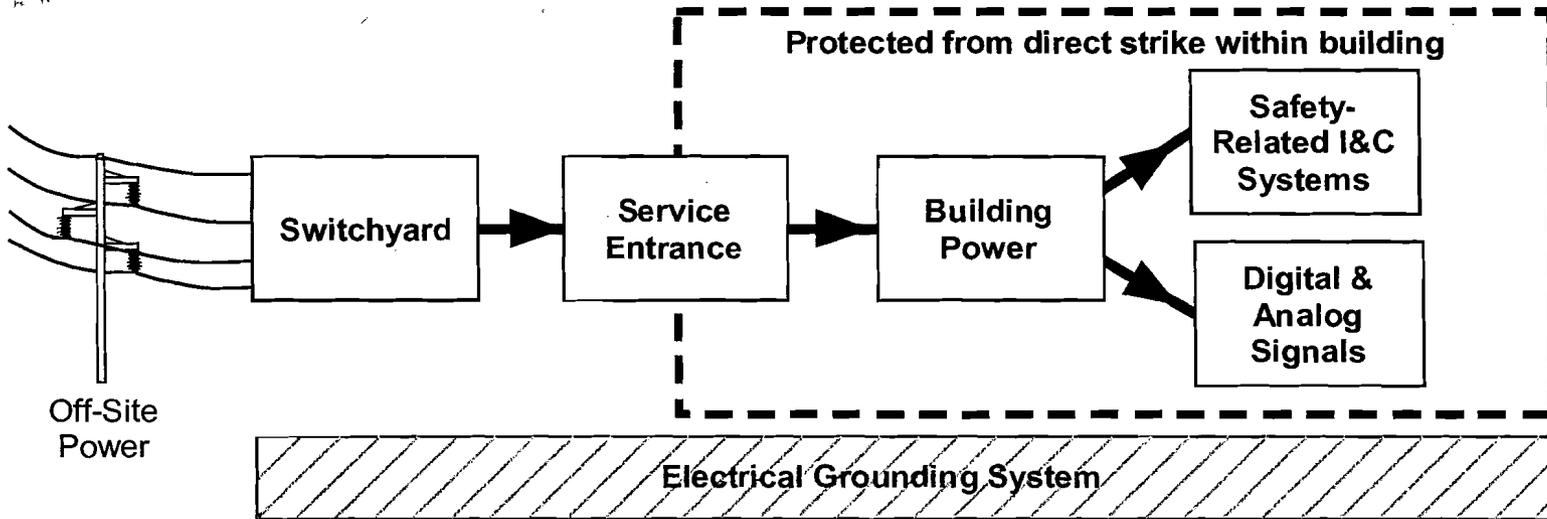


DG-1137 Provides Guidance on Lightning Protection that is Acceptable to NRC Staff

- Supplies guidance on design and installation practices for lightning protection systems
- Recommends general defense against lightning strikes (direct and indirect)
- Provides reasonable assurance that a lightning event will not challenge, compromise, or cause spurious operation of safety-related systems at NPPs
- Establishes the foundation for updating review guidance on lightning protection at NPPs in the Standard Review Plan
- Guidance complementary to RG-1.180, “Guidelines for Evaluating EMI/RFI in Safety-Related I&C Systems”



Scope of DG-1137 Lightning Protection Coverage Is Plant Wide



- Plant switchyard components related to plant power systems
- Power plant buildings
- Electrical distribution, safety-related systems
- Relevant ancillary facilities



DG-1137 Provides Guidelines in Specific Areas Relevant to Lightning Protection

- Grounding and air terminals
- Down-conductors and bonding
- Cable (signal and power) routing
- Protection of low- to medium-voltage equipment
 - Low voltage — 120 - 480 volts
 - Medium voltage — 2.4KV - 13.8KV
- Surge protection devices
- Maintenance and testing



Proposed DG-1137 Implementation

- Applies to new plants
- No backfitting is intended
- For use in evaluating licensee submittals for design certifications and combined licenses
- For use in evaluating submittals regarding system modifications relevant to lightning protection where the licensee voluntarily adopts this guidance

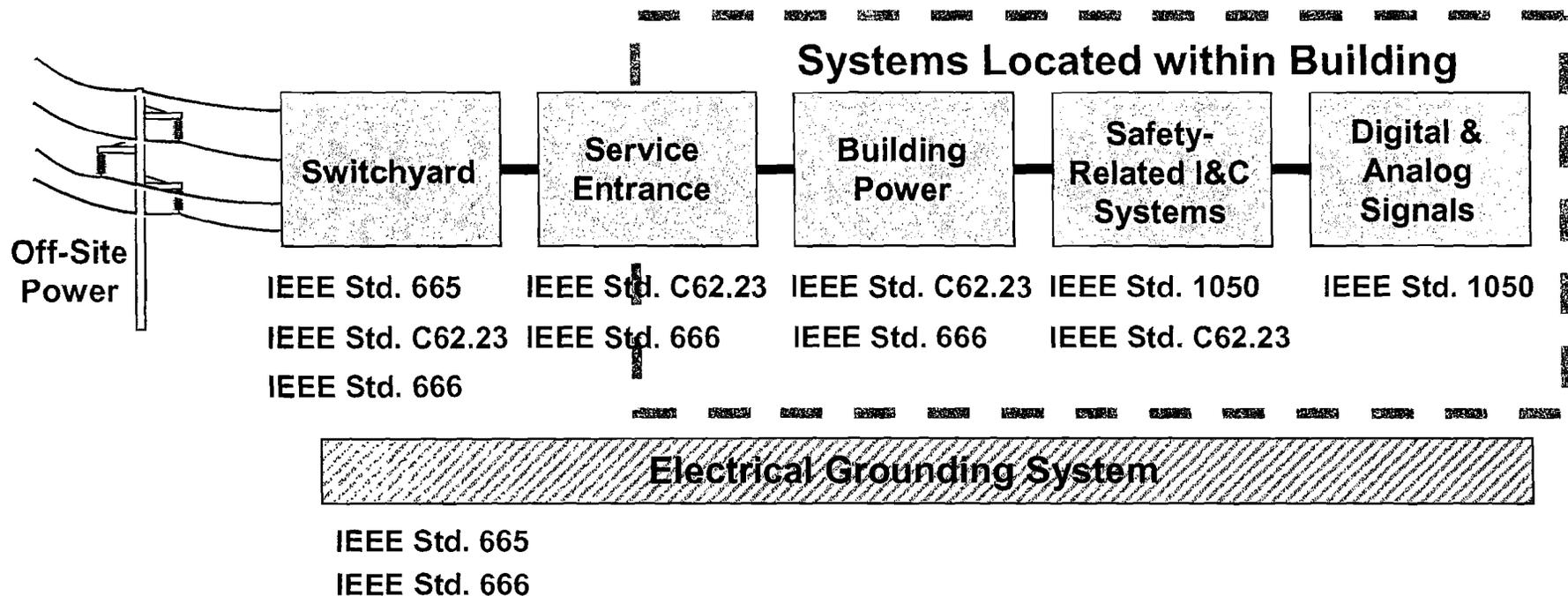


Regulatory Position 1 Endorses Design and Installation Practices in Four Primary IEEE Standards

- IEEE Std 665-1995** (Reaffirmed 2001), IEEE Guide for Generating Station Grounding
- IEEE Std 666-1991** (Reaffirmed 1996), IEEE Design Guide for Electrical Power Service Systems for Generating Stations
- IEEE Std 1050-1996**, IEEE Guide for Instrumentation and Control Equipment Grounding in Generating Stations
- IEEE Std C62.23-1995** (Reaffirmed 2001), IEEE Application Guide for Surge Protection of Electric Generating Plants

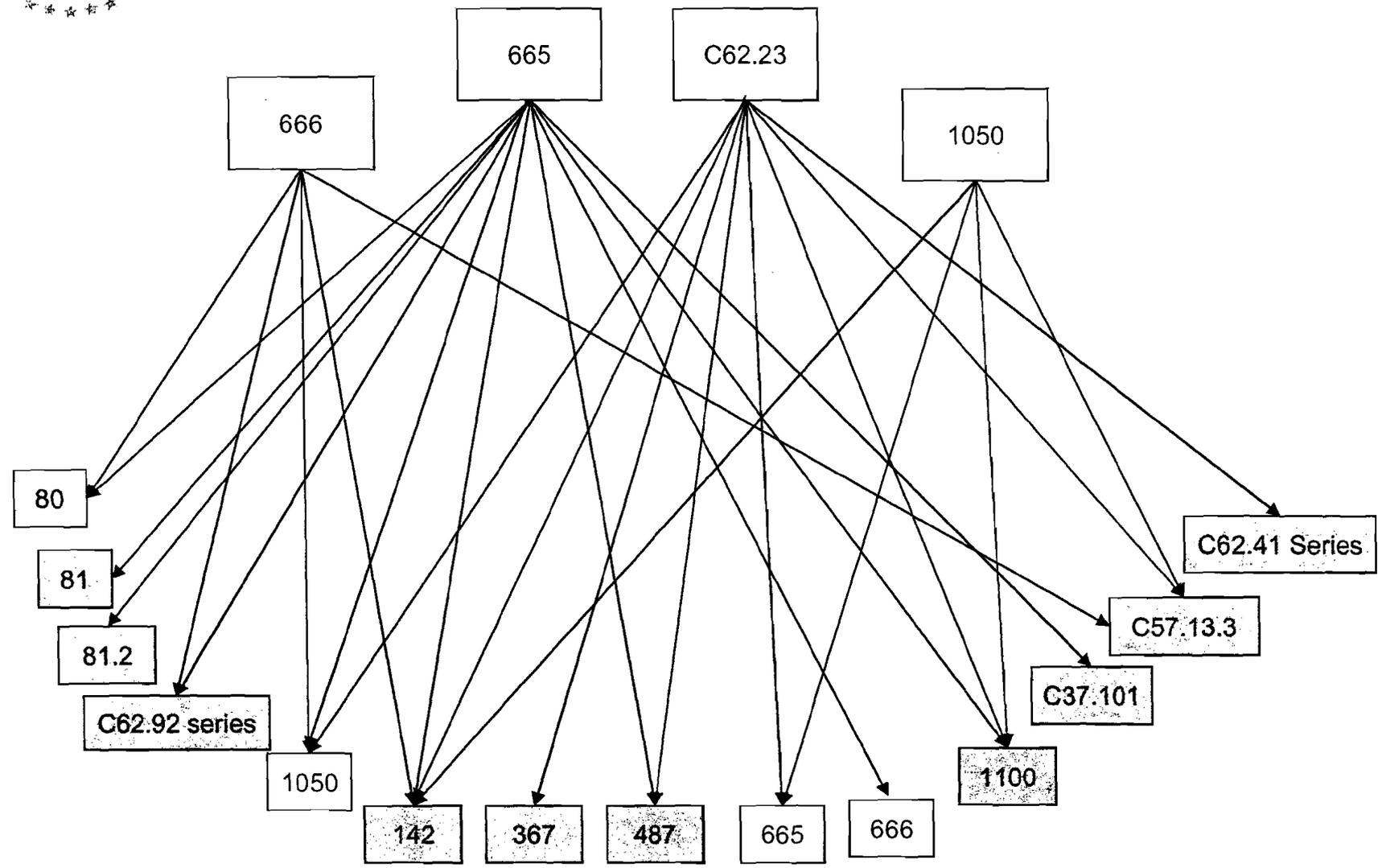


Coverage of Plant Systems by Applicable IEEE Standards





Four Primary IEEE Standards Refer to Several Other Standards





Regulatory Position 2 Identifies Relevant Practices for Inspection, Testing, and Maintenance

- Inspection Guidelines
 - Inspect all conductors and system components
 - Inspect or test surge protection devices to assess effectiveness
 - Inspect and test LPS when altered
- Testing and Maintenance Guidelines
 - Tighten all clamps and splices
 - Measure earth grounding resistance
 - Measure resistance of ground terminals
 - Periodically test and maintain earth grounding systems
 - Refasten and tighten components and conductors
- Comprehensive Records



Resolution of Public Comments

- Two correspondents submitted a total of five comments on DG-1137
- Public comments can be grouped into general categories
 - Lightning protection for non-safety-related equipment whose failure can impact safety
 - Alternate methods of lightning protection
 - Testing and maintenance practices
- DG-1137 reflects the resolution of these comments



Conclusion

DG-1137 Is Ready for Issuance

- Provides regulatory guidance on lightning protection
- Based on NUREG/CR-6866, which documents the technical basis derived from standards and industry experience
- Incorporates public comments
- Seeking ACRS concurrence to publish final effective guide



REGULATORY GUIDE 1.152 REVISION 2 CRITERIA FOR USE OF COMPUTERS IN SAFETY SYSTEMS OF NUCLEAR POWER PLANTS

**Satish Aggarwal
Office of Nuclear Regulatory Research
301-415-6005**

July 6, 2005



BACKGROUND

- **Revision 1 was issued in January 1996**
 - **Endorsed IEEE Std 7-4.3.2-1993**
- **Current version of IEEE Std 7-4.3.2 was issued in 2003**
 - **Revision 2 endorses this version**
- **Provides guidance on cyber security**
 - **Not addressed in the standard**



DRAFT REGULATORY GUIDE

- **DG-1130 was issued in December 2004 for public comment**
- **Initial comment period expired on February 11, 2005**
 - **Extended to March 14, 2005**
 - **Received 20 comment letters**



REGULATORY POSITION 1 FUNCTIONAL AND DESIGN REQUIREMENTS

- **Endorses IEEE Std 7-4.3.2-2003 requirements as a method for satisfying NRC regulations with respect to computer-based safety system design requirements and high functional reliability**



REGULATORY POSITION 2 CYBER SECURITY

- **Subsequent to 9/11, the NRC issued Orders that address, in part, current cyber threats at nuclear power plants**
- **Other actions including regulatory improvements to address cyber security**
- **Nuclear power plants have implemented enhancements**
- **This regulatory position is a step in the right direction**



REGULATORY POSITION 2 CYBER SECURITY

(cont)

- **NRC is taking number of actions, including working with NEI to implement cyber security programs at nuclear power plants**
- **Will revise guidance when an industry standard becomes available**
- **Security guidance is based on one life cycle approach**
 - **Other approaches may be acceptable**



REGULATORY POSITION 2 CYBER SECURITY

(cont)

- **Security functions are part of overall functions performed by safety systems**
- **Topic of security applies to both hardware and software**
- **Two way communication between safety computers and plant wide area network is not acceptable**



ANALYSIS OF PUBLIC COMMENTS

- **Comments in 3 categories**
 - **Complimentary**
 - **Recommended guidelines should be mandatory**
 - **Adverse comments**
 - **Remove the guidance on cyber security**
 - **Let the industry develop guidance**
 - **Technical comments**



TECHNICAL COMMENTS

- **Most of these comments addressed Regulatory Position 2 on cyber security**
- **The staff has incorporated these comments and believes that this has resulted in improved technical guidance**



SIGNIFICANT CHANGES

- **“Software Quality Metrics” clause**
- **Additional guidance for use of COTS hardware and software**
- **V&V references**
 - **IEEE Std 1012-1998**
- **Configuration Management**
 - **IEEE Std 828-1998**
 - **IEEE Std 1042-1987**



SIGNIFICANT CHANGES

(cont)

- **“Software Project Risk Management” references**
 - **IEEE Std 1540-2001 on risk management**
 - **IEEE Std 12207.0-1996 on software lifecycle processes**
- **“Fault Detection and Self-Diagnostics” clause added**
- **“Identification” clause added**
 - **IEEE Std 603-1998**



SIGNIFICANT CHANGES

(cont)

- **Annex C, “Dedication of Existing Commercial Computers” updated**
- **Annex D, “Identification and Resolution of Hazards” revised**



SUMMARY

- **RG 1.152 endorses IEEE Std 7-4.3.2-2003**
- **Adds guidance regarding cyber security**
- **Incorporates public comments**
- **Request ACRS concur on the Regulatory Positions**

ACRS MEETING HANDOUT

Meeting No.	Agenda Item	Handout No.:
524 th	10	10.1
Title: PLANNING & PROCEDURES/ FUTURE ACTIVITIES		
Authors John T. Larkins		
List of Documents Attached	10	
MINUTES OF PLANNING AND PROCEDURES SUBCOMMITTEE HELD ON JULY 5, 2005		
Instructions to Preparer	From Staff Person:	
1. Paginate Attachments	Sam Duraiswamy	
2. Punch holes		
3. Place Copy in file box		

SCHEDULE AND OUTLINE FOR DISCUSSION
ACRS PLANNING AND PROCEDURES SUBCOMMITTEE MEETING
July 5, 2005

The ACRS Subcommittee on Planning and Procedures held a meeting on July 5, 2005, in Room T2B-3, Two White Flint North Building, Rockville, Maryland. The purpose of the meeting was to discuss matters related to the conduct of ACRS business. The meeting was convened at 3:00 p.m. and adjourned at 4:20 p.m.

ATTENDEES

G. Wallis
W. Shack
J. Sieber

ACRS STAFF

J. T. Larkins
A. Thadani
S. Duraiswamy
J. Gallo
M. Scott
M. Snodderly
M. El-Zeftawy
R. Caruso
J. Lamb
J. Flack
C. Santos
E. Thornsbury
R. Savio

- 1) Review of the Member Assignments and Priorities for ACRS Reports and Letters for the July ACRS meeting

Member assignments and priorities for ACRS reports and letters for the July ACRS meeting are attached (pp. 5-10). Reports and letters that would benefit from additional consideration at a future ACRS meeting were discussed.

RECOMMENDATION

The Subcommittee recommends that the assignments and priorities for the July ACRS meeting be as shown in the attachment (pp. 5-10).

2) Anticipated Workload for ACRS Members

The anticipated workload for ACRS members through October 2005 is attached (pp. 11-12). 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 requiring Committee action.

RECOMMENDATION

The Subcommittee recommends that the members provide comments on the anticipated workload. Changes will be made, as appropriate.

3) Meeting with the EDO, Deputy EDOs, and Program Office Directors

The ACRS is scheduled to meet with the EDO, Deputy EDOs, and Office Directors of NRR, RES, and NMSS between 10:00 a.m. and 12 noon, on September 9, 2005 to discuss items of mutual interest. ACNW members are not able to participate in this session. The following list of topics were agreed to by the members during the June meeting.

- a. PWR Sump Performance (GBW/RC)
- b. License Renewal Issues (MVB/CS)
- c. Power Uprate Issues (RSD/RC)
- d. Fire Protection (RSD/JGL)
- e. Anticipated Workload in the area of Advanced Reactors (TSK/MME)
- f. Items Expected to be Submitted to the ACRS for Review in the Next Two Years (GBW/MLS)
- g. Coordination Between ACRS and the NRC staff (GBW/JTL)
- h. Status of Resolution of EDO Commitments (WJS/MRS)

RECOMMENDATION

The Subcommittee recommends that the ACRS Executive Director send the proposed list of topics to the EDO for feedback.

4) Reappointment of Two ACRS Members

The Commission has reappointed Dr. Wallis for a third term. Also, the Commission took exception to its current policy of maximum three-term limit for the ACRS members and reappointed Dr. Shack for a fourth term.

5) Browns Ferry Unit 1 License Renewal and Start-up

The Browns Ferry Unit 1 received the operating license in 1973 and began commercial operation in 1974. The current operating license for Unit 1 expires on 12/20/2013. This Unit has been shut down since 1985 and the reactor was defueled around March 1986. The Tennessee Valley Authority (TVA) plans to restart Unit 1 in May 2007. TVA submitted an application requesting renewal of the operating licenses for Browns Ferry Units 1, 2, and 3 on January 6, 2004.

The Plant License Renewal Subcommittee plans to hold a meeting on October 5, 2005 to review the Draft Safety Evaluation Report associated with Browns Ferry Units 1, 2, and 3 license renewal application. During its April 2005 meeting, the Committee suggested that Dr. Bonaca, Plant License Renewal subcommittee Chairman, hold the meeting as scheduled and prepare an interim letter outlining ACRS concerns related to endorsing renewal of the Unit 1 operating license.

On June 14, 2005, Dr. Bonaca met with Mr. Gillespie, NRR, to discuss issues associated with Unit 1 license renewal. A summary of this meeting is attached (pp. 14-16). At that meeting, it was agreed that one or two Subcommittee meetings should be held to discuss the Browns Ferry Unit 1 modifications and start-up activities. Accordingly, a Joint meeting of the ACRS Subcommittees on Plant License Renewal and on Plant Operations has been tentatively scheduled for September 21, 2005. A proposed list of questions to be sent to the staff prior to this meeting is attached (pp. 17-18).

RECOMMENDATION

The Subcommittee recommends that the members provide feedback on the proposed list of questions by July 22, 2005. The ACRS staff, in coordination with the NRC Project Manager for the Browns Ferry Plant, should send the proposed list of questions to the licensee.

6) Self-Assessment of ACRS Performance

The ACRS/ACNW self-assessment SECY paper was sent to the Commission on July 6, 2005. The ACRS Executive Director and/or the Deputy Executive Director met with all the Commissioners, EDO, and the Program Office Directors to obtain feedback on the ACRS/ACNW performance. Feedback from several

external stakeholders have also been received. The ACRS Executive Director provided a brief summary of the feedback received during the June meeting. The draft SECY paper was provided to the members of the Planning and Procedures Subcommittee for feedback prior to sending it to the Commission. Copies of the SECY paper will be provided to the members during the July meeting. The Planning and Procedures Subcommittee will discuss the actions proposed by the ACRS staff management to address the comments received from internal and external stakeholders.

RECOMMENDATION

The Subcommittee recommends that the ACRS Executive Director keep the Committee informed of any feedback from the Commission on the SECY paper.

7) ACRS Candidates (Closed)

On June 28, 2005, the Screening Panel met to discuss the 42 applications in response to the solicitation for the current vacancies on the ACRS. The Panel selected six applicants to interview during August/September 2005 to fill the vacancy in the area of materials and metallurgy. The ACRS Executive Director recommends that the ACRS form a panel to interview the six applicants concurrent with the Screening Panel's interviews. The Screening Panel will continue to look for qualified candidates to fill the vacancy on the Committee in the plant operations and the thermal-hydraulics areas. Current planning is to have a slate of candidates in the area of plant operations by September 2005.

RECOMMENDATION

The Planning and Procedures Subcommittee recommends that the Committee decide whether to form an interview panel to meet in August 2005 in the ACRS Office to interview the applicants to fill the vacancy in the area of materials and metallurgy, or provide an opportunity to all members to interview the candidates during the September ACRS meeting.

7) Member Issues

Travel Request

Dr. Denning requests (pp. 18) Committee approval and support to attend the PSA '05 Conference scheduled to be held between September 11-15, 2005, in San Francisco, CA.

RECOMMENDATION

The Subcommittee recommends that the Committee approve Dr. Denning's request.

ANTICIPATED WORKLOAD JULY 6-8, 2005

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Apostolakis	—	Thornsbury	Digital I&C Safety System Research Plan and Related Matters [Subcommittee Report]	—	—	—
		Lamb	Risk-Management Technical Specifications [Subcommittee Report]	—	—	—
		Thornsbury	Draft Final Rev. 2 to Reg. Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants"	A	To support staff schedule	—
Bonaca	—	Santos/Lamb	Final Review of the License Renewal Application for D.C. Cook, Units 1 and 2	A	To support staff schedule	—
		Savio/Thornsbury	Status of Phase II Plant Assessment (Closed) [Information Briefing]	—	—	—
Kress	—	El-Zeftawy	ACRS Report on the Draft Commission Paper on Policy Issues Related to New Plant Licensing [Deferred from June]	A	To support staff schedule	Draft

5

ANTICIPATED WORKLOAD JULY 6-8, 2005 (Cont'd)

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Powers	—	El-Zeftawy	FSER Related to North Anna Early Site Permit Application	A	To support staff schedule	—
	Apostolakis/ Bonaca/ Denning	Thornsbury	Status/Interim Results of Quality Assessment of SPAR Models	—	—	—
	Sieber/ Bonaca/ Powers	Santos	Status/Interim Results of the Quality Assessment of Steam Generator Tube Integrity Program at ANL	—	—	—
	—	Nourbakhsh/ Duraismamy	Response to SRM Regarding ACRS Assessment of the Quality of the NRC Research Projects	B	To respond to Commission SRM (Due date 9/30/05)	—
Sieber	—	Lamb/Snodderly	Draft Final Regulatory Guide, DG-1137, "Guidelines for Lightning Protection for Nuclear Power Plants"	A	To support staff schedule	Draft

ANTICIPATED WORKLOAD SEPTEMBER 8-10, 2005

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS	
Bonaca	—	Santos	Draft Final Update to License Renewal Guidance Documents	B	To support staff schedule	—	
Kress	—	El-Zeftawy	10 CFR Part 52 Re-proposed Rulemaking	Possible Larkinsgram	—	—	
Powers	—	El-Zeftawy	Interim Review of the Exelon/Clinton Early Site Permit Application	A	To support staff schedule	—	
		Apostolakis/ Sieber/Wallis	Nourbakhsh/ Duraiswamy	Interim Results of the Quality Assessment of the NRC Research Projects (SPAR Models, SG Tube Integrity Program at ANL, Thermal-Hydraulic Testing at Penn State)	Report to be completed in November	—	—
			Caruso	Staff Plans for High-Burnup Fuel Research and Development of Revised Regulations on Fuel Performance	A	To support staff schedule	—

7

ANTICIPATED WORKLOAD SEPTEMBER 8-10, 2005 (Cont'd)

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Sieber	—	Santos	Final Review of the License Renewal Application for the Millstone Power Station Units 2 and 3	A	To support staff schedule	—
		Lamb/Caruso	Proposed Recommendations for Resolving GSI-80, "Pipe Break Effects on CRD Hydraulic Lines in the Drywells of Mark I and II Containments"	B	To support staff schedule	—
Wallis	Ransom	Caruso	Proposed Rev. 4 to Reg. Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a LOCA"	B	To provide Committee's views	—
	All Members	Larkins/Thadani	Meeting with the EDO, Deputy EDOs, and Program Office Directors	—	—	—

ANTICIPATED WORKLOAD OCTOBER 6-8, 2005

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Apostolakis	—	Thornsbury	Digital I&C Research Plan and Related Matters	A	To provide ACRS views	—
		Thornsbury/ Snodderly	Draft Final Regulatory Guide 1-201, "Guidelines for Categorizing Structures, Systems, and Components for Nuclear Power Plants"	A	To support staff schedule	—
Bonaca	—	Santos/Lamb	Interim Review of the License Renewal Application for Browns Ferry Units 1, 2, and 3	A	To provide ACRS views	—
		Thornsbury/Savio	Licensee Response to Bulletin on Emergency Preparedness and Response Actions for Security-Based Events (CLOSED)	—	—	—
Denning	—	Lamb	Draft Final Rule on Operator Manual Actions	A	To support staff schedule	—
Powers	All Members	Nourbakhsh/ Duraiswamy	Draft ACRS Report to the Commission on the NRC Safety Research Program	Report to be finalized in December	To respond to SRM. Due date March 15, 2006	—
	Apostolakis/ Sieber/ Wallis	Nourbakhsh/ Duraiswamy	Results of the Quality Assessment of the NRC Research Projects (SPAR Models, SG Tube Integrity Program at SNL, Thermal-Hydraulic Testing at Penn State)	Report to be completed in November	—	—
Shack	—	Snodderly	Proposed Regulatory Guide in Support of Risk-Informed 10 CFR 50.46	A	To support staff schedule/Respond to SRM	—

ANTICIPATED WORKLOAD OCTOBER 6-8, 2005 (Cont'd)

LEAD MEMBER	BACKUP	LEAD ENGINEER/ BACKUP	ISSUE	PRIORITY	BASIS FOR REPORT PRIORITY	AVAIL. OF DRAFTS
Sieber	—	Lamb	Davis-Besse Reactor Pressure Vessel Integrity Calculations [Information Briefing]	—	—	—

ACRS Items Requiring Committee Action

1 Generic Letter 2005-XX: Inaccessible or Underground Cables That Disable Accident Mitigation Systems

Member: Mario Bonaca **Engineer:** Cayetano Santos

Estimated Time:

Purpose: Determine a Course of Action

Priority:

Requested by: NRR T. Koshy

During reviews of license renewal applications, the ACRS has raised concerns about the failure of inaccessible or underground cables. The staff has prepared Generic Letter 2005-XX to alert licensees of the potential susceptibility of certain cables to affect the operability of multiple accident mitigation systems and request licensees provide information regarding the monitoring of inaccessible or underground electrical cables. The following specific information is requested:

1) a history of inaccessible or underground cable failures that are within the scope of 10 CFR 50.65 (the Maintenance Rule) and the root causes for the failure.

(2) a description and frequency of all inspection, testing, and monitoring programs to detect degradation of inaccessible or underground cables used to support systems that are within the scope of 10 CFR 50.65 (the Maintenance Rule)

(3) if a program as described in (2) is not in place, justification why such a program is not necessary.

The staff proposes to issue this GL for public comment. In a memorandum dated June 21, 2005, the staff requested the ACRS review and endorse this GL now or defer its review until after the public comments have been resolved. This memo notes that staff expects significant public comments on this proposed GL.

The Planning and Procedures Subcommittee recommends that Dr. Bonaca propose a course of action.

2 Draft Final Regulatory Guide DG-1128, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants (Revision 4 to RG 1.97)" (Open)

Member: John Sieber **Engineer:** John Lamb

Estimated Time:

Purpose: Determine a Course of Action

Priority: Medium

Requested by: RES George Tartal

The staff will be providing us a memo later in June 2005 requesting deferral of our review of this revision of the RG until after public comment. The Digital I&C committee received an information briefing on the draft during its meeting on June 14, 2005. The draft RG endorses IEEE Std. 497-2002, which is both simpler and less prescriptive in nature than the existing RG. No major concerns were identified at that time.

In 2004, the staff had provided the ACRS with a draft of Regulatory Guide DG-1128 and requested a deferred review. In a July 15, 2004 Larkinsgram, the Committee agreed to defer its review until after the public comments have been received and addressed by the staff. During this time, staff identified an issue regarding the way current operating plants were being addressed, and retracted the draft guide. The guide has now been extensively revised and is ready to begin the process again.

The Planning and Procedures Subcommittee recommends that Mr. Sieber propose a course of action.

3 Review of Draft Generic Letter Titled, "Impact of Potentially Degraded Hemyc/MT Fire Barrier Materials on Compliance with Fire Protection Regulations" (Open)

Member: Richard Denning **Engineer:** John Lamb
Estimated Time: 1 hour
Purpose: Determine a Course of Action
Priority: High
Requested by: NRR Chandu Patel

The purpose of the draft generic letter is to request licensees to identify whether Hemyc or MT fire barrier materials are installed and relied upon for separation and/or safe shutdown purposes in accordance with Appendix R or other regulatory commitments. The staff has requested the ACRS to defer its review of the draft generic letter until after the public comment period.

The Planning and Procedures Subcommittee recommends that Dr. Denning propose a course of action.

4 Proposed Rulemaking to Amend 10 CFR Parts 19 and 20: Collection, Reporting and Labeling Requirements, and Clarification of Dose Determination Methodology (Open)

Member: Thomas Kress **Engineer:** Michael Snodderly
Estimated Time:
Purpose: Determine a Course of Action
Priority: Medium
Requested by: NRR Stewart Schneider, NRR

The staff has prepared a proposed rulemaking to 1) amend the provisions of 10CFR19.13 to require licensees to provide annual occupational dose reports only to workers if they meet certain criteria; 2) revise 10CFR20.1905 to add an exemption from the requirements in 10CFR20.1904, for the labeling of certain containers within posted areas in nuclear power reactor facilities; 3) remove the requirement in 10CFR20.2104 that requires licensees to attempt to obtain the records of cumulative occupational radiation doses for all employees; and 4) change the definition of total effective dose equivalent (TEDE) in 10CFR20.1003 to be more consistent with the technical basis for the requirements in Part20 by clarifying that TEDE is the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures). As a result, administrative and paperwork requirements would be reduced without adverse impact on occupational or public exposure limits. The effect of this action would allow NRC licensees to change selected procedures to reduce the administrative burdens associated with the current regulations. NRR would like the ACRS to defer its review until after the public comment period.

The Planning and Procedures Subcommittee recommends that Dr. Kress propose a course of action.

5 Proposed Revision to Standard Review Plan Section 6.5.2, "Containment Spray as a Fission Product Cleanup System" (Open)

Member: Richard Denning **Engineer:** Michael Snodderly
Estimated Time:
Purpose: Determine a Course of Action
Priority: Medium
Requested by: NRR K. Parczewski, 415-2705

NRR has revised Standard Review Plan, Section 6.5.2, "Containment Spray as Fission Product Cleanup System." Based on the nature of the changes, NRR recommends that ACRS waive review of the subject SRP section. The most significant change is the addition of RG 1.1.83 as a reference. RG 1.183 addresses the alternative radiological source term. The use of this regulatory guide was previously considered by the ACRS as captured in SECY-0156, "Final Regulatory Guide 1.183, 'Alternative Radiological Source Terms for Evaluating Design-Basis Accidents at Nuclear Power Plants'."

The Planning and Procedures Subcommittee recommends that Dr. Denning propose a course of action.