



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

February 29, 2012

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: SUMMARY REPORT – 591st MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, FEBRUARY 9-11, 2012

Dear Chairman Jaczko:

During its 591st meeting, February 9-11, 2012, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following letters and memoranda:

LETTERS

Letters to R. W. Borchardt, Executive Director for Operations, NRC, from J. Sam Armijo, Chairman, ACRS:

- Draft 10 CFR 50.54(f) Letter on Implementation of the Near-Term Task Force Recommendations from the Fukushima Daiichi Event, dated February 15, 2012
- Draft Final Revision 1 to Regulatory Guide 1.93, "Availability of Electric Power Sources," dated February 16, 2012

MEMORANDA

Memoranda to R. W. Borchardt, Executive Director for Operations, NRC, from Edwin M. Hackett, Executive Director, ACRS:

- Draft Final Regulatory Guides 1.160 and 4.11, dated February 13, 2012
- International Isotopes Fluorine Extraction and Depleted Uranium De-Conversion Plant Safety Evaluation, dated February 13, 2012

HIGHLIGHTS OF KEY ISSUES

1. Status Update on Implementation of the Near-Term Task Force (NTTF) Recommendations

The Committee met with representatives of NRC Senior Management, Nuclear Energy Institute (NEI), Greenpeace, and Union of Concerned Scientists (UCS) to discuss the NRC staff's current efforts to implement the Near-Term Task Force recommendations. Following directions received from the SRM to SECY-0137, "Prioritization of Recommended Actions to be taken in Response to Fukushima Lessons Learned," dated December 15, 2011, the NRC staff held several public meetings to develop a proposed 50.54(f) letter addressing Recommendations 2.1, 2.3, and 9.3. The NRC staff is also working on the Orders and rulemaking efforts identified in SECY-0137. The NRC staff also described their process for resolving and prioritizing ACRS recommendations stemming from their October 13, 2011, and the November 8, 2011, letters.

Representatives from NEI provided an overall view of the industry objectives, with their prime focus on the continued safe operation of the operating fleet. In its June 2011 report, NEI described how roles are to be shared among the Institute for Nuclear Power Operations (INPO), the Electric Power Research Institute (EPRI), NEI, and the Owners Groups. The recently proposed FLEX program should provide diverse and flexible coping capability by providing an additional layer of safety for beyond design bases external events.

A representative from Greenpeace raised objections to current spent fuel storage practices and power uprates of operating reactors. A representative from UCS indicated having FLEX equipment already being procured raises a concern that NEI's actions may not be consistent with future NRC requirements. The UCS representative also stated that detailed procedures should be part of the upcoming Orders.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated February 15, 2012, in order to bring an item for staff consideration prior to issuance of the final 50.54(f) letter. The Committee recognized that the Orders and the 50.54(f) letter were still being revised prior to their submittal to the Commission on February 17, 2012. However, during their review of the draft 50.54(f) letter, the ACRS found that the guidance provided by the staff for the licensees to perform a Seismic Margin Analysis (SMA) was not consistent with "current applicable Commission requirements and guidance," as required in the Consolidated Appropriations Act, Public Law 112-74, Section 402 in that it did not have the correct reference to the American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) Standard.

2. Draft Final Revision 1 to Regulatory Guide 1.93, "Availability of Electric Power Sources"

The Committee met with representatives of the NRC staff to discuss the draft final Revision 1 to Regulatory Guide 1.93, "Availability of Electric Power Sources." The regulatory guide was revised to include lessons learned from the Northeast Blackout of 2003, to incorporate impacts

of deregulation on offsite power, and to clarify its applicability to evolutionary and passive reactors. The regulatory guide discusses various levels of degradation of the electric power system; and for each of the levels of degradation, it discusses risk considerations and recommended actions. The plant technical specifications specify the Limiting Conditions for Operation (LCO), required actions, and the required action completion times for each degraded level. In the revision, a level was added to the six existing levels to describe the case when the number of available inverters is one less than the LCO requirement. The staff presented the background, discussions, and clarifications added to the regulatory guide, and how the staff incorporated the feedback provided by the ACRS members during a prior subcommittee meeting.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated February 16, 2012, recommending that draft final Revision 1 to Regulatory Guide 1.93 be issued as final.

3. Licensing Approach for Reviewing Instrumentation and Control for the mPower and Other Advanced Reactors

The Committee met with representatives of the NRC staff to discuss the development of a framework for the licensing review of the instrumentation and controls (I&C) for advanced reactors. The staff is developing a customized design specific review standard (DSRS) for the I&C of B&W's mPower small modular reactor. The staff discussed the need for this action with the goals of improving review efficiency and the safety focus. Timely application of lessons learned and challenges involved in the review of future and advanced reactor I&C were also addressed. Some key areas of interest to the Committee were covered. These involved developing an approach for use of proven third-party certification for high-quality software development, developing clear guidance on what licensing basis information is necessary for safety findings at the licensing stage vs. implementation/inspection stage, and developing an integrated hazard analysis approach. Also, the staff's new licensing framework for I&C will try to demonstrate that the reactor protection and safeguards systems are redundant, independent, deterministic, simple, diverse, and contain defense in depth. The staff is also addressing the needed process changes and how the I&C architecture needs to be fully described as part of the licensing process.

Committee Action

This was an information briefing for the Committee. No Committee action was necessary.

4. Draft Final Report on the Biennial ACRS Review of the NRC Safety Research Program

The Committee discussed the draft 2012 ACRS biennial report to the Commission on its review and evaluation of the NRC safety research program. A member of the public provided comments regarding an international collaborative experimental severe accident research

program on spent fuel cladding fires at Sandia National Laboratories. NRC is participating in this Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency (NEA) sponsored project.

Committee Action

The Committee will continue its discussion of the draft final report during its March 8-10, 2012, meeting.

5. Draft Final Regulatory Guides

The Committee considered draft final revisions to the following regulatory guides and decided not to review them. The Committee has no objection to the staff's proposal to issue these Regulatory Guides as final.

- Draft Final Revision 3 to Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"
- Draft Final Revision 2 to Regulatory Guide 4.11, "Terrestrial Environmental Studies for Nuclear Power Stations"

6. International Isotopes Fluorine Extraction and Depleted Uranium De-Conversion Plant Safety Evaluation

The Committee considered the staff's draft final Safety Evaluation Report (SER) for the International Isotopes Fluorine Products, Inc. Fluorine Extraction Process and Depleted Uranium Deconversion Plant. The Committee decided not to review the SER and has no objection to the staff's proposal to issue the SER as final.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the EDO's response of January 16, 2012, to comments and recommendations included in the December 8, 2011, ACRS letter regarding proposed requirements for inspections, test, analyses, and acceptance criteria (ITAAC) maintenance and draft final Revision 1 to Regulatory Guide 1.215, "Guidance for ITAAC Closure under 10 CFR Part 52." The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of January 16, 2012, to comments and recommendations included in the December 12, 2011, ACRS letter regarding ACRS recommendations on Topical Report NEDC-33173P, Supplement 2, Parts 1, 2, and 3, "Analysis of Gamma Scan Data and Removal of Safety Limit Minimum Critical Power Ratio (SLMCPR) Margin." The Committee decided that it was satisfied with the EDO's response.

SCHEDULED TOPICS FOR THE 592nd ACRS MEETING

The following topics are scheduled for the 592nd ACRS meeting, to be held on March 8-10, 2012:

- Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the US Evolutionary Power Reactor (EPR) Design Certification Application
- Development of Source Terms for Small Modular Reactors
- Development of a Computer Model for Extremely Low Probability of Rupture due to Various Degradation Mechanisms
- Turkey Point Units 3 and 4 Extended Power Uprate Application
- Draft Final Report on the Biennial ACRS Review of the NRC Safety Research Program

Sincerely,

/RA/

J. Sam Armijo
Chairman

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Sincerely,

/RA/

J. Sam Armijo
Chairman

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NAME	MBanerjee	MBanerjee	CSantos	EMHackett	EMH for JSA
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OFFICIAL RECORD COPY

Letter to The Honorable Gregory B. Jaczko, NRC Chairman, from J. Sam Armijo, ACRS
Chairman dated February 29, 2012

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