



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

June 1, 2012

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

**SUBJECT: SUMMARY REPORT – 594<sup>th</sup> MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, MAY 10-12, 2012**

Dear Chairman Jaczko:

During its 594<sup>th</sup> meeting, May 10-12, 2012, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report, letters, and memorandum:

**REPORT**

Report to Gregory B. Jaczko, Chairman, NRC, from J. Sam Armijo, Chairman, ACRS:

- State-of-the-Art Reactor Consequence Analyses (SOARCA) Project, dated May 15, 2012

**LETTERS**

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

- Draft Final NUREG-1921, (EPRI Report 1023001), "EPRI/NRC-RES Fire Human Reliability Analysis Guidelines," dated May 17, 2012
- Chapters 3, 9, 14, and 19 of the Safety Evaluation Report with Open Items Associated with the U.S. Evolutionary Power Reactor Design Certification Application, dated May 18, 2012

**MEMORANDUM**

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

- Withdrawal of Regulatory Guides 5.67 and 7.3

## HIGHLIGHTS OF KEY ISSUES

### 1. U.S. EPR Spent Fuel Cask Transfer Facility

The Committee met with representatives of AREVA to discuss the U.S. EPR fuel storage and handling system. The fuel storage and handling system is similar to current operating French pressurized water reactor plants. AREVA provided an overview of the spent fuel transfer facility and operations in the fuel building. In addition, AREVA discussed beyond design basis accident scenarios.

#### Committee Action

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

### 2. Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Review of the U.S. EPR Design Certification (DC) Application

The Committee met with representatives of the NRC staff and AREVA to discuss the following chapters of the Safety Evaluation Report (SER) with Open Items associated with the review of the U.S. EPR DC application: Chapter 3, "Design of Structures, Components, Equipment, and Systems"; Chapter 9, "Auxiliary Systems"; Chapter 14, "Initial Test Program and Inspections, Tests, Analyses, and Acceptance Criteria"; and Chapter 19, "Probabilistic Risk Assessment and Severe Accident Evaluation." Representatives of AREVA provided a general overview of the U.S. EPR design certification application for each of the chapters including its major design features, main safety systems, severe accident mitigation strategies, and protection features for external hazards. The staff discussed its schedule for reviewing the EPR design certification application and summarized the open items in each of these SER chapters.

#### Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated May 18, 2012, concluding that its review of these SER chapters has not identified any additional issues that require further consideration by the Committee at this time. The Committee will review the staff's resolution of open items in these SER chapters in future meetings.

### 3. State-of-the-Art Reactor Consequence Analysis (SOARCA) Project

The Committee met with representatives of the NRC staff to discuss the SOARCA project. The staff presented a summary overview of the objectives, approach, and the results of the analyses for the two pilot plants, Surry and Peach Bottom. The staff also briefed the Committee on the ongoing SOARCA uncertainty analysis for Peach Bottom. The analyses in the SOARCA project are described as "best-estimate" analyses in NUREG-1935. However, this report does not define "best estimate." During the discussion with the staff it appeared that the "best estimate" is intended to mean "most likely." The Committee noted that some of the ongoing uncertainty analyses could affect the "best-estimate" results described in NUREG-1935 and its supporting documents.

#### Committee Action

The Committee issued a report to the NRC Chairman on this matter, dated May 15, 2012, concluding that the SOARCA work is a major step forward in developing more realistic, integral deterministic analyses for severe accident progression for selected accident sequences. The Committee also provided recommendations regarding the conduct of uncertainty analyses and priorities for future work related to SOARCA.

#### 4. St. Lucie, Unit 1, Extended Power Uprate Application

The Committee met with representatives of the NRC staff and Florida Power and Light Company (FPL), regarding the St. Lucie, Unit 1, Extended Power Uprate (EPU) application and the staff's associated draft safety evaluation report. St. Lucie, Unit 1, is a Combustion Engineering designed pressurized water reactor. FPL applied for a power uprate of approximately 12 percent above the currently licensed thermal power of 2700 megawatts thermal (MWt) to 3020 MWt. This uprate also represents approximately an 18 percent increase from its originally licensed thermal power of 2560 MWt. FPL summarized the modifications made to Unit 1 and presented analyses, methodologies, and results for non loss of coolant (LOCA) events, small break LOCAs, and large break LOCAs. FPL also presented the results of their analysis of the steam generator tube integrity under EPU conditions. The staff discussed the thermal conductivity degradation (TCD) issue and the license condition to account for the evolving treatment of TCD. Based on the data and evaluation of the calculations, the staff concluded FPL's safety analyses results analyses are acceptable.

#### Committee Action

The Committee will consider a proposed report on this matter during their June 6-8, 2012 meeting.

#### 5. Withdrawal of Regulatory Guides 5.67 and 7.3

The Committee considered the staff's bases for withdrawing the following Regulatory Guides. The Committee has no objection to the staff's proposal to withdraw these Guides.

- Regulatory Guide 5.67, "Material Control and Accounting for Uranium Enrichment Facilities Authorized to Produce Special Nuclear Material of Low Strategic Significance"
- Regulatory Guide 7.3, "Procedures for Picking Up and Receiving Packages of Radioactive Materials"

#### RECONCILIATION OF ACRS RECOMMENDATIONS

- The Committee considered the EDO's response of March 15, 2012, to a recommendation included in the February 16, 2012, ACRS letter on draft final Revision 1 to Regulatory Guide 1.93, "Availability of Electric Power Sources." The Committee decided that it was satisfied with the EDO's response.

- The Committee considered the EDO's response of April 9, 2012, to a recommendation included in the March 20, 2012, ACRS letter on the final safety evaluation report associated with the Florida Power and Light Turkey Point Nuclear Plant, Units 3 and 4, license amendment request for an extended power uprate. The Committee decided that it was satisfied with the EDO's response.

#### SCHEDULED TOPICS FOR THE 595<sup>th</sup> ACRS MEETING

The following topics are scheduled for the 595<sup>th</sup> ACRS meeting, to be held on June 6-8, 2012.

- Proposed Revision of 10 CFR Part 20 for Conformance with International Commission on Radiological Protection (ICRP) Recommendations
- Disposition of Near-Term Task Force (NTTF) Tier 3 Recommendations and Guidance Documents Associated with NTTF Recommendation 2.3
- Proposed Revision 1 to Regulatory Guide (RG) 1.192, "Operation and Maintainability Code Case Acceptability, ASME OM Code"
- Grand Gulf Nuclear Station Unit 1 Extended Power Uprate Application
- Assessment of the Quality of Selected NRC Research Projects
- Meeting with the Commission
- Significant Reactor Operating Experiences

Sincerely,

*/RA/*

J. Sam Armijo  
Chairman

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J. Sam Armijo  
Chairman

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Letter to The Honorable Gregory B. Jaczko, NRC Chairman, from J. Sam Armijo, ACRS  
Chairman, dated June 1, 2012

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