



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

March 31, 2011

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

**SUBJECT: SUMMARY REPORT – 581<sup>st</sup> MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, MARCH 10-12, 2011**

Dear Chairman Jaczko:

During its 581<sup>st</sup> meeting, March 10-12, 2011, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports and memoranda:

**REPORTS**

Reports to Gregory B. Jaczko, Chairman, NRC, from Said Abdel-Khalik, Chairman, ACRS:

- SECY-11-0024, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews," dated March 16, 2011
- Point Beach Nuclear Plant, Units 1 and 2, Extended Power Uprate Application, dated March 23, 2011
- Status of Groundwater Protection Task Force Efforts, dated March 23, 2011

**MEMORANDA**

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

- Draft Final Regulatory Guide 1.149, dated March 10, 2011
- Draft Final Revision to 10 CFR 50.55a, "Codes and Standards," dated March 10, 2011
- Supplement 2 to NUREG-1907, "Safety Evaluation Report Related to the License Renewal of Vermont Yankee Nuclear Power Station, Docket No. 50-271," dated March 10, 2011
- Withdrawal of Regulatory Guide 8.5, dated March 10, 2011

## HIGHLIGHTS OF KEY ISSUES

### 1. Commission Paper on the Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews

The Committee met with representatives of the NRC staff to discuss SECY-11-0024, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews." The staff's briefing discussed the status of the technical and policy issues associated with small modular reactor (SMR) licensing. The staff described the considerations involved in the recommended licensing approach described in SECY-11-0024. This review process takes a graded approach by performing detailed, in-depth reviews of systems, structures, and components (SSCs) that are both safety related and risk significant while progressively less detailed reviews are performed for SSCs that are determined to be non-safety related, not risk significant, or both. In addition to developing risk informed design specific review frameworks for integral Pressurized Water Reactor (iPWR) designs in the near term, the staff plans to develop a risk-informed, performance-based, regulatory framework for the licensing of iPWRs and non-Light Water Reactor (LWR) SMR designs using the technology neutral framework insights over a longer term.

#### Committee Action

The Committee issued a report to the NRC Chairman on this matter dated March 16, 2011, concluding that the staff's approach for the license review of iPWRs is an appropriate first step for near-term SMR applications. The longer-term approach for review of non-LWR SMRs was the logical extension of NUREG-1860 (Feasibility Study for a Risk-Informed and Performance-Based Regulatory Structure for Future Plant Licensing), and the proposed pilot studies can provide the necessary information for full development of a new framework, while not putting the licensing process at risk. The Committee recommended that the staff consider the use of Phenomena Identification and Ranking Table (PIRT)-like processes to guide development of the design-specific review plans.

### 2. Point Beach, Units 1 and 2, Extended Power Uprate Application

The Committee met with representatives of the NRC staff, NextEra Energy (the licensee) and their consultants to discuss the Point Beach Nuclear Plant, Units 1 and 2, extended power uprate (EPU) application. The presentations provided an overview of the EPU application and described the safety analyses performed to support the EPU, the change in plant risks due to the EPU, the effects of increased steam generator flow, human factors and operator response times, and power ascension testing. NextEra Energy applied for an EPU of approximately 17% increase above the currently licensed thermal power to 1800 MWt. Major plant modifications and upgrades were performed on the secondary side of the plant to accommodate the higher steam and feedwater flows needed to produce the augmented power. The higher power level is achieved by increasing the average enrichment of fuel assemblies, the amount of new fuel in each reload, the temperature rise across the core, and the operating reactor coolant average temperature. The staff and the licensee presented the results of the analyses that demonstrate

the units can operate at the higher power levels and meet the regulatory requirements. The committee review included evaluations of the safety analyses, material effects, flow-induced vibration impacts, risk assessments, electrical system impacts, and the planned plant power ascension testing.

#### Committee Action

The Committee issued a letter to the NRC Chairman on this matter dated March 23, 2011, recommending that the application for an extended power uprate of Point Beach Nuclear Plants, Units 1 and 2, be approved.

### 3. Status of Groundwater Protection Task Force Efforts

The Committee met with representatives of the NRC staff to discuss SECY-11-0019, "Senior Management Review of Overall Regulatory Approach to Groundwater Protection," and its companion memorandum entitled, "Initiatives for Improved Communication of Groundwater Incidents." The staff presented the results of the Groundwater Task Force report of June 2010. The overall conclusion of this report was that the NRC is accomplishing its stated mission of protecting public health and safety, and protecting the environment. Four key recommendations were identified. The Senior Management Review Group's (SMRG) review of the Task Force report led to the recommendations contained in SECY-11-0019 and the associated staff memorandum on improving communications. The staff also described NRC actions and industry activities regarding the evaluation of buried piping and underground tanks at nuclear reactor facilities.

#### Committee Action

The Committee issued a letter to the NRC Chairman on this matter dated March 23, 2011, concluding that the Committee agreed with the conclusions and recommendations of the SMRG in SECY-11-0019 and the associated staff memorandum. The Committee also recommended that results of routine inspections of the implementation of NEI-07-07, Industry Groundwater Protection Initiative, be considered for an improvement to the radiological effluent performance indicator of the Reactor Oversight Process. The Committee also recommended the continuation of efforts to develop tools to communicate with the public regarding the differences in groundwater protection standards.

### 4. Improvements to the Generic Issue Program

The Committee met with representatives of the NRC staff to discuss the agency's Generic Issues Program. The staff's presentation included a historical perspective of the program, key elements of the program, results of generic issues evaluations, and past problems with the program. The staff described the criteria for identifying generic issues, the 5-stage process for resolving these issues, and enhancements to the Generic Issues Program. The staff's presentation concluded with a description of the status of current generic issues, new proposed issues, and program initiatives.

### Committee Action

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

#### 5. Draft Final Regulatory Guide 1.149

The Committee decided not to review the draft final Regulatory Guide (RG) 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training, License Examinations, and Applicant Experience Requirements," and has no objection to the staff's proposal to issue this RG as final.

#### 6. Draft Final Revision to 10 CFR 50.55a, "Codes and Standards"

The Committee decided not to review the draft final revision to 10 CFR 50.55a and has no objection to the staff's proposal to issue the revised rule.

#### 7. Supplement 2 to NUREG-1907, "Safety Evaluation Report Related to the License Renewal of Vermont Yankee Nuclear Power Station, Docket No. 50-271"

The Committee decided not to review Supplement 2 to NUREG-1907 and has no objection to the staff's proposal to issue the supplement.

#### 8. Withdrawal of Regulatory Guide 8.5

The Committee has no objection to the staff's proposal to withdraw RG 8.5, "Criticality and Other Interior Evacuation Signals."

### RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of February 9, 2011, to comments and recommendations included in the January 7, 2011 ACRS report on the safety aspects of the license renewal application for the Kewaunee Power Station. The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of February 15, 2011, to comments and recommendations included in the January 19, 2011 ACRS report on the safety aspects of the aircraft impact assessment for the Westinghouse Electric Company AP1000 Design Certification Amendment Application. The Committee decided that it was satisfied with the EDO's response.

SCHEDULED TOPICS FOR THE 582<sup>nd</sup> ACRS MEETING

The following topics are scheduled for the 582<sup>nd</sup> ACRS meeting, to be held on April 7-9, 2011:

- Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Calvert Cliffs, Unit 3 Combined License Application Referencing the U.S. Evolutionary Power Reactor
- Events at the Fukushima Reactor Site in Japan
- Draft Final Regulatory Guide 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants," and Cyber Security Related Activities
- Human Factors Considerations in Emerging Technology in Nuclear Power Plants
- Preparation for Meeting with the Commission

Sincerely,

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Said Abdel-Khalik  
Chairman

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Said Abdel-Khalik  
Chairman

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Letter to the Honorable Gregory B. Jaczko, Chairman, from Said Abdel-Khalik, ACRS Chairman, dated March 31, 2011

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