



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

June 27, 2012

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

**SUBJECT: SUMMARY REPORT - 595<sup>th</sup> MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, JUNE 6-8, 2012**

Dear Chairman Jaczko:

During its 595<sup>th</sup> meeting, June 6-8, 2012, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports and letters:

**REPORTS**

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

- Final Safety Evaluation Report Associated with the Florida Power and Light St. Lucie, Unit 1, License Amendment Request for an Extended Power Uprate, dated June 20, 2012
- Grand Gulf Nuclear Station, Unit 1, Extended Power Uprate License Amendment Request, dated June 18, 2012

**LETTERS**

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

- NRC Staff's Draft Plans and Status Summaries for Tier 3 Japan Lessons Learned Recommendations, dated June 19, 2012
- Proposed Revision 1 to Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," dated June 18, 2012

## HIGHLIGHTS OF KEY ISSUES

### 1. Proposed Revision of 10 CFR Part 20 for Conformance with International Commission on Radiological Protection (ICRP) Recommendations

The Committee met with representatives of the NRC staff to review SECY-12-0064, "*Recommendations for Policy and Technical Direction to Revise Radiation Protection Regulations and Guidance*." The SECY paper contains the staff's recommendations on conforming the NRC's radiation protection requirements and guidance to the International Commission on Radiation Protection (ICRP) recommendations. The staff presented a brief history of the revisions to the Agency's radiation protection regulations and identified areas in which they conform and don't conform to the current recommendations of the ICRP. The staff explained the results of workshops held to obtain stakeholder feedback and comments on the proposed options and recommendations. The staff also presented its recommended option to continue to develop the technical bases for making some conforming revisions to the Agency's requirements.

#### Committee Action

The Committee decided to hold an additional meeting of the Radiation Protection and Nuclear Materials Subcommittee to obtain additional information from the staff on the technical bases for some of their recommended revisions to the Agency's radiation protection regulations.

### 2. Disposition of Near-Term Task Force (NTTF) Tier 3 Recommendations and Guidance Documents Associated with NTTF Recommendation 2.3

The Committee met with representatives of the NRC staff to discuss the draft program plans for disposition of the Tier 3 Japan Lessons Learned Recommendations. These plans are part of a 6-month status report to the Commission on the developments supporting the Fukushima efforts. This SECY paper is expected to be delivered to the Commission by July 2012.

The staff also presented the final guidance for seismic and flooding walkdowns to be conducted under NTTF Tier 1 Recommendation 2.3. All issues discussed during a May ACRS Fukushima Subcommittee meeting were fully considered by the staff prior to their finalization of the walkdown guidance.

A member of the public addressed the ACRS on: (1) the need for in-core thermocouples in order to facilitate core monitoring during severe accidents, and (2) issues with using core-exit temperature as an indicator for actuation of hydrogen igniters during severe accidents for AP1000.

#### Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated June 19, 2012, concluding that the staff's proposed plans for addressing Tier 3 recommendations have been developed appropriately at this stage. The Committee also provided observations on the various implementation plans.

3. Proposed Revision 1 to Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code"

The Committee met with representatives of the NRC staff to discuss proposed Revision 1 to Regulatory Guide 1.192 (DG-1232), "Operation and Maintenance Code Case Acceptability, American Society of Mechanical Engineers (ASME) OM Code." The ASME periodically publishes OM Code Cases, which provide alternatives developed and approved by ASME or explain the intent of existing Code requirements. Regulatory Guide 1.192 identifies the Code Cases that have been determined by the NRC to be acceptable alternatives to applicable parts of the OM Code. The briefing focused on the review of Code Cases OMN-1, Revision 1, and OMN-3 and the staff's conditions for the use of these Code Cases. OMN-1 establishes the requirements for pre-service and inservice testing to assess the operational readiness of active motor-operated valves (MOVs) in light water reactors while OMN-3 establishes the component safety categorization methodology. The staff presented data, parameters, and trends from several operating units that have adopted OMN-1.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated June 18, 2012, recommending that proposed Revision 1 to Regulatory Guide 1.192 be issued for public comments after the conditions for acceptability of Code Case OMN-3 are revised to include reference to Regulatory Guide 1.200 and to add a condition that the risk categorization be reviewed when the probabilistic risk assessment (PRA) is updated.

4. Grand Gulf Nuclear Station Unit 1 Extended Power Uprate Application

The Committee met with representatives of the NRC staff and Entergy Operations, Inc. (the licensee) to discuss the Grand Gulf Nuclear Station, Unit 1 (GGNS) extended power uprate (EPU) license amendment request and the associated staff's draft final safety evaluation. The licensee seeks a power uprate of 15% from the originally licensed thermal power of 3833 MWt to 4408 MWt. The discussion topics included the GGNS plant modifications, reactor thermal-hydraulics reviews, nuclear fuel analytical methods, fuel thermal conductivity degradation, containment analysis, spent fuel pool criticality, power ascension testing program, and steam dryer analysis. Steam dryer integrity was a key topic. The GGNS EPU is the first operating plant application to use General Electric Hitachi's Plant Based Load Evaluation methodology for predicting the fluctuating pressure loads on the steam dryer. The licensee has replaced the original GGNS steam dryer in preparation for EPU operation. The replacement dryer includes several structural enhancements to increase its resistance to high-cycle fatigue. The staff concluded that the results of the licensee's steam dryer stress analysis demonstrated that the stress intensity due to flow-induced vibration at EPU is less than half the ASME code fatigue stress limit and that steam dryer stress intensities are acceptable for normal, upset, emergency, and faulted load combinations. The licensee has instrumented the replacement dryer with pressure transducers, accelerometers, and strain gages. The steam dryer's performance will be closely monitored during power ascension, with defined hold points.

### Committee Action

The Committee issued a report to the NRC Chairman on this matter, dated June 18, 2012, recommending that the GGNS EPU application be approved. The Committee concluded that the license condition for monitoring during power ascension testing provides reasonable assurance that unanticipated vibration modes induced in the steam dryer will be detected and addressed. In addition, the Committee concluded that the license condition to perform periodic surveillance of the neutron absorbing material in the fuel storage racks provides adequate assurance of subcriticality of the spent fuel until the staff completes its review of the licensee's criticality analysis.

### 5. Assessment of the Quality of Selected NRC Research Projects

The Committee discussed the status of the ACRS Panels' review of the quality assessment of NRC research projects on NUREG-1953, "Confirmatory Thermal-Hydraulic Analysis to Support Specific Success Criteria in the Standardized Plant Analysis Risk Models – Surry and Peach Bottom," and NUREG/CR-7040, "Evaluation of JNES Equipment Fragility Tests for Use in Seismic Probabilistic Risk Assessments for U.S. Nuclear Power Plants."

### Committee Action

The Committee will continue its discussion of the quality assessment of the research projects noted above during its July 11-13, 2012, meeting.

### 6. Meeting with the Commission

On June 7, 2012, the Committee met with the Commission to discuss the following topics of mutual interest:

- Spent Fuel Pool Scoping Study
- Implementation of Fukushima Recommendations
- State-of-the-Art Reactor Consequence Analyses (SOARCA) Project
- NRC Safety Research Program

### Committee Action

As of the date of issuance of this report, the Commission Staff Requirements Memorandum on the meeting had not been finalized.

## 7. Significant Reactor Operating Experience

The Committee met with representatives of the NRC staff to discuss three recent significant operating events: the H.B. Robinson fire, the Brunswick reactor pressure vessel head tensioning problems, and the Fort Calhoun flooding. For each event, the staff presented the facility description, the event description, the licensee response, and NRC actions. In addition to the questions asked during the meeting, the Committee requested additional information regarding Brunswick's root cause evaluation and NRR's protocol in coordinating with the Army Corps of Engineers in dam-related issues.

### Committee Action

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

## RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the EDO's response of April 26, 2012, to comments and recommendations included in the March 13, 2012, ACRS letter regarding the final disposition of Fukushima-related ACRS recommendations in letters dated October 13, and November 8, 2011. The Committee decided that the EDO did not provide a clear justification for not adopting the ACRS' recommendations except to say that the staff's decision was based on the regulatory framework and various regulatory vehicles available. Since the ACRS has already expressed its disagreement with the staff's prioritization, the Committee decided not to issue another letter to the EDO on this matter.
- The Committee considered the EDO's response of May 23, 2012, to comments and conclusions included in the April 25, 2012, ACRS letter on the NRC's Spent Fuel Pool Scoping Study. The Committee decided that it was satisfied with the EDO's response.
- The Committee considered the EDO's response of April 24, 2012, to comments and recommendations included in the March 15, 2012, ACRS letter on Chapters 6, 7, 11, 13, 15, 16, and 18 of the Safety Evaluation Report with Open Items associated with the certification of the U.S. EPR Design. The Committee decided that it was satisfied with the EDO's response.

SCHEDULED TOPICS FOR THE 596<sup>th</sup> ACRS MEETING

The following topics are scheduled for the 596<sup>th</sup> ACRS meeting, to be held on July 11-13, 2012:

- St. Lucie Unit 2 Extended Power Uprate Application
- Technical Basis for Regulating Extended Storage and Transportation of Spent Nuclear Fuel
- Development of Interim Staff Guidances (ISGs) Supporting the Near-Term Task Force (NTTF) Tier 1 Orders
- NUREG-1934, "Nuclear Power Plant Fire Modeling Analysis Guidelines"
- Assessment of the Quality of Selected NRC Research Projects - FY 2012

Sincerely,

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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

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