



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

September 23, 2014

The Honorable Allison M. Macfarlane  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**SUBJECT:           SUMMARY REPORT – 617<sup>th</sup> MEETING OF THE ADVISORY COMMITTEE  
ON REACTOR SAFEGUARDS, SEPTEMBER 4-6, 2014**

Dear Chairman Macfarlane:

During its 617<sup>th</sup> meeting, on September 4-6, 2014, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letter, and memoranda:

**REPORTS**

Reports to Allison M. Macfarlane, Chairman, NRC, from John W. Stetkar, Chairman, ACRS:

- Report on the Safety Aspects of the DTE Electric Company Combined License Application for Fermi Unit 3, dated September 22, 2014
- SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses," dated September 11, 2014

**LETTER**

Letter to Mark A. Satorius, Executive Director for Operations, NRC, from John W. Stetkar, Chairman, ACRS:

- Generic Letter 20XX-XX, "Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools," dated September 15, 2014

**MEMORANDA**

Memoranda to Mark A. Satorius, Executive Director for Operations, NRC, from Edwin M. Hackett, Executive Director, ACRS:

- Proposed Branch Technical Position, dated September 9, 2014

- Draft Regulatory Guides, dated September 9, 2014
- Proposed Generic Letter, dated September 9, 2014
- ACRS Review of Interim Staff Guidance, dated September 9, 2014
- Supplemental Safety Evaluation Report, dated September 9, 2014
- Revision to 10 CFR Part 71, dated September 9, 2014

### HIGHLIGHTS OF KEY ISSUES

1. SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses"

The Committee met with representatives of the NRC staff to discuss SECY-14-0087, "Qualitative Consideration of Factors in the Development of Regulatory Analyses and Backfit Analyses." The staff discussed a set of methods that could be used for the qualitative consideration of factors within the regulatory analysis process. The staff proposed to develop guidance that would: (1) establish a systematic process for the qualitative consideration of factors that cannot be evaluated quantitatively, (2) increase the transparency of how the staff's recommendation considered such factors qualitatively in relation to the quantitative analysis, and (3) increase consistency in the qualitative consideration of factors for regulatory analyses. The staff discussed Enclosure 1 to the SECY, which lists many factors of potential importance that are difficult or impossible to quantify and contains a comprehensive review of agency regulatory actions that have relied on qualitative considerations. Finally, the staff provided a limited review of the qualitative consideration of factors by external organizations and described evaluation techniques for benefits and costs that are difficult to quantify.

### Committee Action

The Committee issued a letter report to the Chairman on this matter dated September 11, 2014, recommending that the NRC staff proposal be approved. The Committee also recommended that:

- The proposed guidance should seek to provide a single, comprehensive decision-making approach and not be limited to only separate qualitative and quantitative methods; and
- The staff should meet with the Committee periodically during development of the updated guidance to enable us to review and, if appropriate, to comment on the planned consideration of qualitative factors.

2. Draft Final Generic Letter 20XX-XX, "Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools"

The Committee met with representatives of the NRC staff and the Nuclear Energy Institute to discuss neutron absorber degradation issues and draft Generic Letter 20XX-XX, "Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools." The staff described various neutron-absorbing materials (e.g., Boraflex, Boral®, Metamic™, borated stainless steel, BORALCAN, and Carborundum) and several instances of degradation and deformation of these materials in the spent fuel pools of operating reactors. The staff proposes to issue a generic letter requesting information demonstrating that credited neutron absorbing materials are in compliance with the current licensing and design basis as well as applicable regulatory requirements. The staff also discussed their responses to public comments. A representative from the Nuclear Energy Institute discussed ongoing industry efforts on neutron absorbers and an alternative to the draft generic letter that focuses industry and regulatory attention on those materials that are most susceptible to aging and degradation mechanisms.

A member of the public provided oral comments during this session.

Committee Action

The Committee issued a letter to the NRC Executive Director of Operations on this matter dated September 15, 2014, recommending that the Generic Letter be issued after consideration of an additional recommendation. The Committee recommends that additional clarity should be provided regarding the level of response required, based on a tiered approach depending on the type of neutron absorber being used and the degree to which the absorber is being credited in the pool criticality analysis.

3. Safety Evaluation Report (SER) Associated with the Fermi, Unit 3, Combined License Application (COLA) Referencing the Economic Simplified Boiling Water Reactor (ESBWR) Design

The Committee met with representatives of the NRC staff and DTE Electric Company (DTE) to discuss the combined license application for Fermi Unit 3. DTE provided an overview of the design and discussed a departure from the ESBWR standard design, Fermi site characteristics, and Fukushima Near-Term Task Force Recommendations. The NRC staff discussed the safety evaluation for the review of the site-specific flooding and seismic evaluations, mitigation strategies for beyond-design-basis external events, reliable spent fuel pool instrumentation, and emergency preparedness.

Several members of the public provided oral comments during this session.

Committee Action

The Committee issued a letter to the NRC Chairman on this matter dated September 22, 2014, concluding that there is reasonable assurance that Fermi Unit 3 can be built and operated without undue risk to the health and safety of the public and recommended that the combined

license application be approved following its final revision. The Committee also concluded that there is reasonable assurance that the ESBWR design and the Fermi Unit 3 site satisfy the requirements resulting from the Fukushima Near-Term Task Force recommendations. However, this review has identified generic issues related to seismic reevaluations, mitigating strategies, and spent fuel pool instrumentation. The Committee recommends further action by the staff to resolve these issues not only for Fermi Unit 3, but also for currently operating plants and other combined license applicants.

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

The Committee discussed the ACRS panels' review of the quality assessment of NRC research projects on NUREG/CR-7143, "Characterization of Thermal-Hydraulic and Ignition Phenomena in Prototypic, Full-Length Boiling Water Reactor Spent Fuel Pool Assemblies after a Postulated Complete Loss-of-Coolant Accident," and NUREG/CR-7148, "Confirmatory Battery Testing: The Use of Float Current Monitoring to Determine Battery State-of-Charge."

#### Committee Action

The Committee will complete its review of the quality assessment of these research projects during its October 2-4, 2014 meeting.

#### 5. Draft Regulatory Guides

The Committee considered the following draft Regulatory Guides, and decided not to review them. The Committee has no objection to the staff's proposal to issue the Guides for public comment but would like an opportunity to review the draft final version of these Guides following the public comment period.

- Proposed Revision 1 to Regulatory Guide 1.36 (DG-1312), "Nonmetallic Thermal Insulation for Austenitic Stainless Steel"
- Proposed new Regulatory Guide (DG-1305), "Design and Analysis Computer Program Commercial-Grade Dedication Requirements"

#### 6. Proposed Branch Technical Position

The Committee considered the proposed new Branch Technical Position (BTP) 8-9, "Open Phase Conditions in Electric Power Systems," and decided not to review it. The Committee plans to review this BTP following the public comment period.

#### 7. Proposed Generic Letter

The Committee considered the draft Generic Letter 20XX-XX, "Treatment of Natural Phenomena Hazards at Fuel Cycle Facilities," and decided not to review it. The Committee would like an opportunity to review the draft final version of the generic letter following the public comment period.

8. Revision to 10 CFR Part 71

The Committee considered the draft final rule to amend 10 CFR Part 71, "Revisions to Transportation Safety Requirements and Harmonization with International Atomic Energy Agency Transportation Requirements," and decided not to review it. The Committee has no objection to the staff's plan to issue this rule as final.

9. Supplemental Safety Evaluation Report

The Committee considered Supplement 1 to the Safety Evaluation Report Related to the License Renewal of Limerick Generating Station and decided not to review it. The Committee has no objection to the staff's plan to issue this Supplement.

10. ACRS Review of Interim Staff Guidance

The Committee discussed its role regarding the review of interim staff guidance (ISG). The scope of ACRS review responsibilities includes regulatory guidance documents with safety or risk significance such as regulatory guides, branch technical positions, standard review plans, and interim staff guidance. The Committee noted the staff practice of issuing ISGs without providing the ACRS an opportunity to perform a timely review. This includes both draft ISGs issued for public comment and final ISGs issued for use. This practice results in staff consideration of comments from industry but not the ACRS.

The memorandum of understanding between the OEDO and the Executive Director for the ACRS states that "when a proposed regulatory action is to be published for public comment, the ACRS may review the matter both before and after public comment, as appropriate."

The staff and ACRS have established an effective process for informing the Committee of new or revised regulatory guides and allowing the Committee to identify those guides it wishes to review prior to issuance. The Committee issued a memo to the NRC Executive Director of Operations on this matter dated September 9, 2014, requesting his assistance in developing and implementing a similar process for ISGs throughout the agency.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the EDO's response of June 25, 2014, to comments and recommendations included in the May 14, 2014 ACRS letter on human reliability analysis models. The Committee was satisfied with the EDO's response.
- The Committee considered the EDO's response of July 25, 2014, to comments and recommendations included in the June 19, 2014 ACRS letter on the revised Fuel Cycle Oversight Process. The Committee was satisfied with the EDO's response.
- The Committee considered the EDO's response of June 25, 2014, to comments and recommendations included in the April 21, 2014 ACRS letter on the credit for containment accident pressure to ensure operation of US-APWR emergency core cooling system pumps. The Committee was satisfied with the EDO's response.

- The Committee considered the EDO's response of August 12, 2014, to comments and recommendations included in the July 18, 2014 ACRS letter on the Peach Bottom Atomic Power Station Units 2 and 3 extended power uprate license amendment request. The Committee was satisfied with the EDO's response.
- The Committee considered the EDO's response of July 9, 2014, to comments and recommendations included in the April 15, 2014 ACRS report, "Review and Evaluation of the NRC Safety Research Program." The Committee was satisfied with the EDO's response.

#### SCHEDULED TOPICS FOR THE 618<sup>th</sup> ACRS MEETING

The following topics are scheduled for the 618<sup>th</sup> ACRS meeting, to be held on October 2-4, 2014:

- Clarifying the Process for Addressing Reevaluated Flooding Hazards Identified From Japan Lessons Learned Activities for Operating Nuclear Power Plants
- Callaway Plant Unit 1 License Renewal Application
- Assessment of the Quality of Selected NRC Research Programs - FY 2014
- Meeting with the Commission
- Meeting with Chairman Macfarlane

Sincerely,

*/RA/*

John W. Stetkar  
Chairman

- The Committee considered the EDO’s response of August 12, 2014, to comments and recommendations included in the July 18, 2014 ACRS letter on the Peach Bottom Atomic Power Station Units 2 and 3 extended power uprate license amendment request. The Committee was satisfied with the EDO’s response.
- The Committee considered the EDO’s response of July 9, 2014, to comments and recommendations included in the April 15, 2014 ACRS report, “Review and Evaluation of the NRC Safety Research Program.” The Committee was satisfied with the EDO’s response.

**SCHEDULED TOPICS FOR THE 618<sup>th</sup> ACRS MEETING**

The following topics are scheduled for the 618<sup>th</sup> ACRS meeting, to be held on October 2-4, 2014:

- Clarifying the Process for Addressing Reevaluated Flooding Hazards Identified From Japan Lessons Learned Activities for Operating Nuclear Power Plants
- Callaway Plant Unit 1 License Renewal Application
- Assessment of the Quality of Selected NRC Research Programs - FY 2014
- Meeting with the Commission
- Meeting with Chairman Macfarlane

Sincerely,

*/RA/*

John W. Stetkar  
Chairman

Accession No: **ML14266A313**

Publicly Available Y

Sensitive N

Viewing Rights:  NRC Users or  ACRS Only or  See Restricted distribution

|               |          |              |          |           |             |
|---------------|----------|--------------|----------|-----------|-------------|
| <b>OFFICE</b> | ACRS     | SUNSI Review | ACRS     | ACRS      | ACRS        |
| <b>NAME</b>   | GShukla  | GShukla      | CSantos  | EMHackett | EMH for JWS |
| <b>DATE</b>   | 09/23/14 | 09/23/14     | 09/23/14 | 09/23/14  | 09/23/14    |

**OFFICIAL RECORD COPY**