



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

June 25, 2010

MEMORANDUM TO: ACRS Members

FROM: Sherry Meador **/RA/**  
Technical Secretary, ACRS

SUBJECT: CERTIFICATION OF THE MEETING MINUTES FROM  
THE ADVISORY COMMITTEE ON REACTOR  
SAFEGUARDS 571<sup>st</sup> FULL COMMITTEE MEETING  
HELD ON APRIL 8-10, 2010 IN ROCKVILLE, MARYLAND

The minutes of the subject meeting were certified on June 24, 2010 as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment:  
As stated



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

June 24, 2010

MEMORANDUM TO: Sherry Meador, Technical Secretary  
Advisory Committee on Reactor Safeguards

FROM: Cayetano Santos, Chief */RA/*  
Reactor Safety Branch  
Advisory Committee on Reactor Safeguards

SUBJECT: MINUTES OF THE 571<sup>st</sup> MEETING OF THE ADVISORY  
COMMITTEE ON REACTOR SAFEGUARDS (ACRS),  
APRIL 8-10, 2010

I certify that based on my review of the minutes from the 571<sup>st</sup> ACRS Full Committee meeting, and to the best of my knowledge and belief, I have observed no substantive errors or omissions in the record of this proceeding subject to the comments noted below.

OFFICE	ACRS	ACRS:RSB/Sunsi
NAME	SMeador	CSantos/sam
DATE	06/24/10	06/24/10

**OFFICIAL RECORD COPY**

CERTIFIED

Date Certified: 06/24/2010

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- III. Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Review of the U.S. Evolutionary Power Reactor (USEPR) Design Certification Application (Open/Closed)
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Appendix I – *Federal Register* Notice  
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During its 571<sup>st</sup> meeting, April 8-10, 2010, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report, letters, and memoranda:

### REPORT

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

- Interim Staff Guidance DC/COL-ISG-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d) Loss of Large Areas of the Plant due to Explosions or Fires from a Beyond-Design-Basis Event," dated April 20, 2010 - Official Use Only - Sensitive

### LETTERS

Letters to R. W. Borchardt, Executive Director for Operations, NRC, from Said Abdel-Khalik, Chairman, ACRS:

- Chapters 2, 4, 5, 8, 10, 12, and 17 of the Safety Evaluation Report with Open Items Associated with the U.S. Evolutionary Power Reactor Design Certification Application, dated April 21, 2010
- Licensing Topical Report, NEDC-33173P, Supplement 3, "Applicability of GE Methods to Expanded Operating Domains – Supplement for GNF2 Fuel," dated April 27, 2010

### MEMORANDA

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

- Draft Final Regulatory Guides 1.147, 1.68.2, 1.84, 1.193, 6.9, and 8.40, dated April 15, 2010
- Proposed Interim Staff Guidance DC/COL-ISG-014 and DC/COL-ISG-021, dated April 15, 2010
- Final Interim Staff Guidance DC/COL-ISG-017 and DC/COL-020, dated April 15, 2010
- Proposed Regulatory Guides 1.127, 3.13, 8.2, DG-1240, and DG-1247, dated April 15, 2010

# MINUTES OF THE 571<sup>st</sup> MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

## ROCKVILLE, MARYLAND

The 571<sup>st</sup> meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held in Conference Room 2B3, Two White Flint North Building, Rockville, Maryland, on April 8-10, 2010. Notice of this meeting was published in the *Federal Register* on March 23, 2010 (72 FR 13799-13800) (Appendix I). The purpose of this meeting was to discuss and take appropriate action on the items listed in the meeting schedule and outline (Appendix II). The meeting was open to public attendance.

A transcript of selected portions of the meeting is available in the NRC's Public Document Room at One White Flint North, Room 1F-19, 11555 Rockville Pike, Rockville, Maryland. Copies of the transcript are available for purchase from Neal R. Gross and Co., Inc., 1323 Rhode Island Avenue, NW, Washington, DC 20005. Transcripts are also available at no cost to download from, or review on, the Internet at <http://www.nrc.gov/ACRS/ACNW>.

### ATTENDEES

ACRS Members: Dr. Said Abdel-Khalik (Chairman), Dr. J. Sam Armijo (Vice-Chairman), Mr. John Stetkar (Member-at-Large), Dr. Sanjoy Banerjee, Dr. Dennis Bley, Mr. Charles Brown, Dr. Michael Corradini, Dr. Dana A. Powers, Mr. Harold Ray, Dr. Michael Ryan, Dr. William Shack, and Mr. John Sieber. For a list of other attendees see Appendix III.

#### I. Chairman's Report (Open)

[Note: Mr. Edwin Hackett was the Designated Federal Official for this portion of the meeting.]

Dr. Said Abdel-Khalik, Committee Chairman, convened the meeting at 8:30 a.m. In his opening remarks he announced that the meeting was being conducted in accordance with the provisions of the Federal Advisory Committee Act. He reviewed the agenda items for discussion and noted that no written comments or requests for time to make oral statements from members of the public had been received. Dr. Bonaca also noted that a transcript of the open portions of the meeting was being kept and speakers were requested to identify themselves and speak with clarity and volume.

II. Draft Final Interim Staff Guidance (ISG) DC/COL-ISG-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d)"

[Note: Ms. Maitri Banerjee was the Designated Federal Official for this portion of the meeting.]

The Committee met with representatives of the NRC staff and the Nuclear Energy Institute (NEI) to discuss Draft Final Interim Staff Guidance DC/COL-ISG-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d) Loss of Large Areas of the Plant due to Explosions or Fires from a Beyond-Design-Basis Event." A portion of this session was closed to the public to allow discussion of security-related and safeguards information. The ISG provides guidance to new power reactor applicants and licensees on implementation of 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d), and endorses NEI 06-12, Revision 3, "B.5.b Phase 2 & 3 Submittal Guideline," with certain exceptions and clarifications. These exceptions and clarifications resulted from experience gained by the staff from the implementation of NRC Order EA-02-026, "Interim Compensatory Measures (ICM) Order," which was issued on February 25, 2002, to operating power reactor licensees. The NRC staff and NEI representatives discussed the development of the guidance documents and major issues addressed therein. The ISG had undergone a stakeholder comment period, and the staff discussed major comments, primarily from the NEI, and how they were resolved. The Committee issued a report to the NRC Chairman on this matter, dated April 20, 2010, recommending that the ISG be issued.

III. Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Review of the U.S. Evolutionary Power Reactor (USEPR) Design Certification Application

[Note: Mr. Derek Widmayer was the Designated Federal Office for this portion of the meeting.]

The Committee met with representatives of AREVA NP and the NRC staff to discuss the following chapters of the Safety Evaluation Report (SER) with Open Items associated with the review of the U.S. Evolutionary Power Reactor (U.S. EPR) Design Certification Application: Chapter 2, "Site Characteristics"; Chapter 4, "Reactor"; Chapter 5, "Reactor Coolant System and Connected Systems"; Chapter 8, "Electric Power"; Chapter 10, "Steam and Power Conversion"; Chapter 12, "Radiation Protection"; and Chapter 17, "Quality Assurance." Representatives of AREVA provided a general overview of the U.S. EPR design 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 number of open items in each of these SER chapters. The Committee issued a letter to the EDO on this matter, dated April 21, 2010, concluding that its review of these SER chapters has not identified any issues that merit 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. The Committee will also review interactions of U.S. EPR structures, systems, and components (SSC) described in these chapters with SSC discussed in other SER chapters in future meetings.

IV. Supplement 3 to General Electric (GE) Topical Report NEDC-33173PA, "Applicability of GE Methods to Expanded Operating Domains"

[Note: Mrs. Zena Abdullahi was the Designated Federal Official for this portion of the meeting.]

The Committee met with representatives of the NRC staff, GE-Hitachi Nuclear Energy (GEH), and Global Nuclear Fuel Americas (GNF-A) to discuss GEH Licensing Topical Report, NEDC - 33173P, Supplement 3, "Applicability of GE Methods to Expanded Operating Domains - Supplement for GNF2 Fuel." The NRC previously approved NEDC-33173PA, "Applicability of GE Methods to Expanded Operating Domains," and one of the limitations placed on acceptance of the GEH methods was that if new fuel designs were proposed for operation at extended power uprate (EPU) and expanded domain conditions, their acceptability should be reevaluated. Supplement 3 addresses this limitation for the new GNF2 fuel design. The staff evaluated the application of the GEH suite of neutronic and thermal-hydraulic codes for cores loaded with GNF2 fuel operating in the expanded operating domain. The staff concluded that the GNF2 design features do not pose an inherent challenge to the capability of the analysis methods and that applicability of the methods is essentially the same for both designs.

The Committee issued a letter to the EDO on this matter, dated April 27, 2010, recommending that Supplement 3 to GEH Licensing Topical Report NEDC-33173PA, be approved. As fuel assembly designs have evolved, heterogeneity in bundle geometry, composition, and complexity have increased and present models may not adequately capture the complexity of these new designs. Therefore, the Committee recommended that review of advanced computational tools for nuclear core analysis be given high priority to expedite the introduction of updated methods into the regulatory process. The Committee also noted that detailed data are needed to qualify and assess the accuracy and predictive capability of the analytical methods in use and under development.

V. Final ISG ESP/DC/COL-ISG-015, "Post-Combined License Commitments"

[Note: Mr. Kent Howard was the Designated Federal Official for this portion of the meeting.]

The Committee met with representatives of the NRC staff to discuss Final Interim Staff Guidance DC/COL-ISG-015, "Post-Combined License Commitments." The ISG provides guidance on the completion of action items and information items identified during design certification and combined license application reviews. This ISG supplements guidance provided to the NRC staff in Section 1.0, "Introduction and Interfaces," of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," concerning the review of applications to support early site permit (ESP), design certification (DC), and combined license (COL) applications. In addition, this ISG supplements the guidance provided in Section C.III.4 of Regulatory Guide (RG) 1.206, "Regulatory Guide for Combined License Applications for Nuclear Power Plants," June 2007. The staff's presentation was

focused on three options for tracking the completion of post-licensing commitments. These options were:

- Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) (10 CFR 52.99)
- License conditions (10 CFR 50.54)
- Information commitment within the Final Safety Analysis Report (FSAR) or other licensing basis document (10 CFR 50.71(e))

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

#### VI. Executive Session

[Note: Mr. Edwin Hackett was the Designated Federal Official for this portion of the meeting.]

##### A. Reconciliation of ACRS Comments and Recommendations/EDO Commitments

No items of reconciliation comments were discussed during the meeting.

##### B. Report of the Planning and Procedures Subcommittee Meeting

##### Review of the Member Assignments and Priorities for ACRS Reports and Letters for the May ACRS Meeting

Member assignments and priorities for ACRS reports and letters for the April ACRS meeting were discussed. Reports and letters that would benefit from additional consideration at a future ACRS meeting were also discussed.

##### Anticipated Workload for ACRS Members

The anticipated workload for ACRS members through July 2010 was discussed and the objectives were to:

- Review the reasons for the scheduling of each activity and the expected work product and to make changes, as appropriate
- Manage the members' workload for these meetings
- Plan and schedule items for ACRS discussion of topical and emerging issues

#### Regulatory Guides and Interim Staff Guidances

##### a) Draft Final Regulatory Guides

The staff plans to issue the following Draft Final Regulatory Guides.



- Draft Final Revision 16 to Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1"

Regulatory Guide 1.147, Revision 16, identifies Code Cases that the NRC staff has determined to be acceptable alternatives to Section XI of the ASME Boiler and Pressure Vessel (BPV) Code. In this revision, the staff reviewed the Section XI Code Cases listed in Supplements 2 through 11 to the 2004 Edition and Supplement 0 published with the 2007 Edition (Supplement 0 also serves as Supplement 12 to the 2004 Edition) of the ASME BPV Code. Appendix A to this guide lists the supplements reviewed, the edition, the supplement number, and the date on which the supplement was approved by the ASME Board on Nuclear Codes and Standards. Appendix B is a list of the Section XI Code Cases published by the ASME in the 11 supplements. Finally, Appendix C is a current list of all Section XI Code Cases.

- Draft Final Revision 2 to Regulatory Guide 1.68.2 (DG-1236), "Initial Startup Test Program to Demonstrate Remote Shutdown Capability for Water-Cooled Nuclear Power Plants"

Regulatory Guide 1.68.2, Revision 2, describes an initial startup test program acceptable to the NRC staff for demonstrating hot shutdown capability and the potential for cold shutdown from outside the control room. This guide is applicable to water-cooled nuclear power plants. The staff has identified the need for additional guidance on the startup test program and the role of additional personnel in the control room during testing. The startup test program should include a demonstration of both requirements in GDC 19 (i.e., the ability of equipment outside the control room (1) to safely shut down the reactor, bring it to a hot shutdown condition, and maintain the unit in a safe condition during the hot shutdown; and (2) to bring the reactor to a cold shutdown condition).

- Draft Final Revision 35 to Regulatory Guide 1.84, "Design, Fabrication, and Material Code Case Acceptability, ASME Section III"

Regulatory Guide 1.84, Revision 35, identifies Code Cases that the NRC staff has determined to be acceptable alternatives to Section III of the ASME BPV Code. For Revision 35 of the guide, NRC reviewed the Section III Code Cases listed in Supplements 2B11 to the 2004 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code and Supplement 0 to the 2007 Edition (Supplement 0 also serves as Supplement 12 to the 2004 Edition). Appendix A to this guide lists the supplements reviewed, the applicable edition, and the date on which each supplement was approved by the ASME Board on Nuclear Codes and Standards. Appendix B is a list of the Section III Code Cases addressed in the 11 supplements. Finally, Appendix C is a current list of all Section III Code Cases.

- Draft Final Revision 3 to Regulatory Guide 1.193, "ASME Code Cases Not Approved For Use"

Regulatory Guide 1.193, Revision 3, lists the Code Cases that NRC has determined not to be acceptable for use on a generic basis. A brief description of the basis for the determination is provided with each Code Case. Licensees may submit a request to implement one or more of the Code Cases listed below through 10 CFR 50.55a(a)(3), which permits the use of alternatives to the Code requirements referenced in 10 CFR 50.55a provided that the proposed alternatives result in an acceptable level of quality and safety. Licensees must submit a plant-specific request that addresses NRC's concerns about the Code Case at issue.

- Draft Final Revision 1 to Regulatory Guide 6.9 (DG-6007), "Establishing Quality Assurance Programs for the Manufacture and Distribution of Sealed Sources and Devices Containing Byproduct Material"

Regulatory Guide 6.9, Revision 1, endorses the methods and procedures for a quality assurance/quality control program described in Section 10.7, "Quality Assurance and Quality Control" of NUREG 1556, Volume 3, "Consolidated Guidance About Materials Licenses: Applications for Sealed Source and Device Evaluation and Registration," which was issued April 2004. This guide was issued as DG-6007 for public comments on September 24, 2009. The public comment period closed on November 21, 2009. No comments were received. As the result, Regulatory Guide 6.9 is the same as DG-6007, except for format changes.

- Draft Final Regulatory Guide 8.40 (DG-8039), "Methods for Determining Effective Dose Equivalent from External Exposure"

Regulatory Guide 8.40 is a proposed new Regulatory Guide that describes methods acceptable to the NRC staff for measuring effective dose equivalent from external exposure (EDEX). These methods provide a conservative estimate of EDEX and may be used to calculate the total effective dose equivalent (TEDE) in demonstrating compliance with TEDE based regulatory requirements consistent with the provisions in 10 CFR 20.1201(c). This guide was issued as DG-8039 for public comments on September 29, 2009. The public comment period closed on November 26, 2009. Comments were received and minor revisions were made as the result of those comments.

#### b) Proposed Regulatory Guides

The staff plans to issue the following Proposed Regulatory Guides for public comment and would like to know whether the Committee wants to review these Guides prior to being issued for public comment.

- Proposed Revision 2 to Regulatory Guide 1.127 (DG-1245), "Inspection of Water Control Structures Associated with Nuclear Power Plants"

DG-1245 is the proposed Revision 2 to Regulatory Guide 1.127. The revision incorporates the updated guidance in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Sections 2.5.4, "Stability of Subsurface Materials and Foundations," and 2.5.5, "Stability of Slopes," as well as the requirements in the Federal Emergency Management Agency (FEMA) Publication 93, "Federal Guidelines for Dam Safety." The guide has been revised to be consistent with the current requirements in 10 CFR Part 50. DG-1245 is being revised to be similar to Regulatory Guide 3.11, "Design, Construction, and Inspection of Embankment Retention Systems at Uranium Recovery Facilities."

- Proposed Revision 1 to Regulatory Guide 3.13 (DG-3040), "Design, Construction, and Inspection of Embankment Retention Systems at Fuel Cycle Facilities"

DG-3040 is the proposed Revision 1 to Regulatory Guide 3.13, "Guide for Acceptable Waste Storage Methods at UF<sub>6</sub> Production Plants." DG-3040 addresses the extensive changes in environmental laws and NRC regulations for solid and liquid radioactive waste storage practices that have occurred since the initial publication of Regulatory Guide 3.13 in October 1973. The title has been changed to broaden applicability to all fuel cycle facilities rather than just uranium hexafluoride production plants. Some of the information in the original Regulatory Guide is outdated, e.g., the reference to burying small amounts of radioactive waste onsite. Since the requirements of Appendix B to 10 CFR Part 20 are still applicable, DG-3040 is focused on the storage and release of liquid effluent to the environment. All references to 10 CFR 20 have been updated. Construction information provided in the original Regulatory Guide is outdated because the Army Corps of Engineers Manual referenced has been superseded. DG-3040 acknowledges other means of compliance. DG-3040 is revised to be similar to Regulatory Guide 3.11, "Design, Construction, and Inspection of Embankment Retention Systems at Uranium Recovery Facilities," which was revised in November 2008.

- Proposed Revision 1 to Regulatory Guide 8.2 (DG-8038), "Administrative Practices in Radiation Surveys and Monitoring"

DG-8035 is the proposed Revision 1 to Regulatory Guide 8.2 and describes acceptable methods and administrative practices associated with surveys and monitoring of ionizing radiation in licensed institutions. Regulatory Guide 8.2 is intended primarily for administrative and management personnel. The 1973 version of Regulatory Guide 8.2 cited the radiation monitoring requirements of 10 CFR Part 20 and endorsed the American National Standards Institute (ANSI) standard N13.2-1969, "Guide for Administrative Practices in Radiation Monitoring." ANSI reaffirmed N13.2-1969 in 1982. ANSI N13.2 is no longer referenced as the information is outdated. However, recommendations in certain sections of ANSI N13.2 that are still relevant are included in DG-8035. DG-8035 also indicates the availability of different volumes of NUREG 1556, "Consolidated Guidance about Material Licenses," that also provide guidance for administrative practices in radiation monitoring and surveys.

- Draft Regulatory Guide DG-1240, "Condition Monitoring Program for Electric Cables Used in Nuclear Power Plants"

DG-1240 is a proposed new Regulatory Guide that provides guidance as to methods and techniques which can be used to monitor and address degradation in control and power cabling. Electric cables are one of the most important components in a nuclear plant since they provide the power needed to operate electrical equipment and to control the equipment, e.g., to perform safety functions and accident mitigation. Cables are considered passive components with long service lives and they have been very reliable. In part because of their longevity and reliability, cables have not typically received the attention normally associated with a safety significant component. The regulations (10 CFR 50.65(a)(1)) requires monitoring the performance of components, e.g., cables, to provide reasonable assurance that the components are capable of fulfilling their intended functions. Consideration of the anticipated environmental conditions, such as moisture or flooding, needs to be part of any evaluation to ensure performance of their function. The cable failures that could disable risk-significant equipment are expected to have monitoring programs to demonstrate that the cables can perform their safety function when needed.

- Draft Regulatory Guide DG-1247, "Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants"

DG-1247 is a proposed new Regulatory Guide that provides guidance that the staff considers acceptable for use in selecting the design-basis hurricane and design-basis hurricane-generated missiles that a nuclear power plant should be designed to withstand to prevent undue risk to the health and safety of the public. In March 2007, the staff revised Regulatory Guide 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants." This revision reduced the wind velocities and, hence, the objects that it could loft and become missiles. As the result, it is possible the tornado wind speeds may not bound those generated by hurricanes, hence hurricanes may loft and generate missiles that could have greater impact on structures, systems, and components than those generated by tornadoes.

#### c) Final Interim Staff Guidance

The staff issued the following Interim Staff Guidances (ISGs) as final and would like to know whether the Committee wants to review this Guidance.

- Final Interim Staff Guidance 017, "Ensuring Hazard-Consistent Seismic Input for Site Response and Soil Structure Interaction Analyses"

ISG-017 provides guidance on (1) comparing Certified Seismic Design Response Spectra (CSDRS) with Foundation Input Response Spectra (FIRS), (2) acceptable methods that would allow the retention of compatibility between the computed-based seismic motions and the FIRS used in the Soil-Structure Interaction (SSI) analysis, (3) providing a procedure for performing the necessary checks to meet the minimum

seismic input requirement at the foundation, and (4) documentation requirements. The NRC staff used the Nuclear Energy Institute (NEI) White Paper, "Consistent Site-response/Soil-Structure Interaction Analysis and Evaluation," and the Brookhaven National Laboratory Report (N6112-051208), Revision 1, "Consistent Site Response-SSI Calculations" as the bases for developing this guidance.

- Final Interim Staff Guidance 020, "Implementation of a Seismic Margin Analysis for New Reactors Based on Probabilistic Risk Assessment"

ISG-020 provides guidance on (1) a PRA-based seismic margin analysis method and its implementation for design certification (DC) applications, (2) site- and plant-specific updates of the DC PRA-based seismic margin evaluation for combined license (COL) applications, (3) post-COL verification of as-designed and as-built plant seismic margin capacity preceding initial fuel load, and (4) documentation requirements. The NRC staff used the ASME/ANS, "Standard for Level 1 Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications", as endorsed by the NRC, to the maximum extent possible in developing this guidance.

#### d) Proposed Interim Staff Guidances

The staff issued the following Interim Staff Guidance (ISG) for public comment.

- Proposed Interim Staff Guidance 014, "Assessing Ground Water Flow and Transport of Accidental Radionuclide Releases"

The purpose of this ISG is to provide COL and DC applicants additional clarity and guidance for the application of Sections 2.4.12 and 2.4.13 of the Standard Review Plan (SRP), NUREG 0800 "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants." During its review of recent early site permit (ESP) and COL applications, the NRC staff identified recurring issues involving inconsistencies and gaps between guidance provided in the SRP sections stated above relating to on-site hydrogeologic testing and measurements, conceptual model development of radionuclide transport in groundwater, and analysis of the radiological consequences of releases. To address these issues, this ISG focuses on resolving the inconsistencies and gaps in the existing guidance. Because of the complexity of the issues related to groundwater contamination, the ISG has been divided between ISG-014 (herein) and ISG-013. ISG-014 provides additional guidance on analyzing the aqueous transport of radionuclides through the subsurface with groundwater through the use of a structured hierarchical approach. ISG-014 emphasizes the consideration of the hydrogeologic conditions and flow system that control the transport of radionuclides in the analysis.

- Proposed Interim Staff Guidance 021, "Using a Gas Turbine Driven Standby Emergency Alternating Current Power System"

The purpose of this ISG is to clarify the NRC staff guidance for review of Nuclear Power Plant (NPP) designs using emergency gas turbine generators (EGTGs) as alternating current (AC) power sources to supply power to safety-related equipment or equipment important to safety for all operational events and during accident conditions. It is

anticipated that new reactor designs will incorporate gas turbines to supply the standby emergency AC power system. Only EGTG systems that are air cooled and diesel fueled are considered in this interim guidance.

#### ACRS Meeting With the Commission

The ACRS will meet with the Commission on Wednesday, June 9, 2010, to discuss items of mutual interest. The following list of proposed topics was submitted to SECY for Commission's approval.

1. Overview (Abdel-Khalik)
  - Major Accomplishments
  - Update on Solicitation for New ACRS Members
  - New Reactors Review Activities
  - License Renewal/Power Uprates
  - Major Areas of Ongoing/Future Activities
2. Risk-Informed Performance-Based Fire Protection (RG 1.205) (Stetkar)
3. NRC Safety Research Program (Powers)
4. Credit for Containment Accident Pressure (Shack)
5. Status of Rulemaking for Disposal of Depleted Uranium (Ryan)

Item 4, BWROG COP Methodology, is scheduled to be considered by the Full Committee during the May meeting. A letter report will be discussed and approved at that time and so will be the set of slides supporting this presentation.

#### Upcoming Combined Presentations by NRO and NRR on Mutual Topical Reports

The Offices of NRR and NRO would like to determine the best way to present to the ACRS fuel-related topical reports that apply to both operating reactors as well as to the ABWR design. Some of the "dual application" topical reports will address operation at the extended domain.

#### Future Presentation by NEI on Reactor Issues

NEI has suggested a presentation to the ACRS on reactors issues and any other initiatives the ACRS may suggest for discussion.

#### Status of Solicitation for New Members

The ACRS has received permission from the Commission to extend the solicitation for a new member and to solicit for multiple positions. The new solicitation was published in the Federal Register on January 13, 2010, and will close on April 13, 2010.

### Mid-Month Interaction with the Members on Future Activities

A revised process is being implemented where, by the middle of the month, the members will receive current versions of the Anticipated Workload Report and the Committee Meeting List. These two reports will cover the period spanning over the next 4 months. The members should provide their feedback so that their comments can be incorporated in time for the next full Committee meeting. Also, any member that is assigned more than one letter in a given month will be asked to confirm that he agrees with that workload.

### Annual Visit to a Nuclear Plant and Meeting with the Regional Administrator

Mr. Jack Sieber, Chair of the Plant Operations and Fire Protection Subcommittee, has finalized the list of possible Region IV sites to visit at the end of July:

- Comanche Peak
- Diablo Canyon
- Grand Gulf
- Palo Verde
- Columbia Generating Station

### Proactive Initiatives

This is a follow up from the March P&P meeting on the availability of contract resources. Member Michael Corradini suggests using faculty and university scientists to research long-term technical projects in support of ACRS activities. These projects would be under the purview of the ACRS Senior Technical Advisor, Dr. Hossein Nourbakhsh, with input from the ACRS technical staff. ACRS members would need to determine topics and nominate the qualified technical support that is required. NGNP, small modular reactors, LWR sustainability, and aging components (concrete and cable) are some current, emerging topics that could be covered under this approach.

### Subcommittee Structure

The Management Team is currently revising the ACRS subcommittee structure in order to account for the departures of members, Mr. Maynard and Dr. Apostolakis.

#### C. Future Meeting Agenda

Appendix IV summarizes the proposed items endorsed by the Committee for the 572<sup>nd</sup> ACRS Meeting, May 6-8, 2010.

A list of documents that were provided to the Committee during the 571<sup>st</sup> ACRS Meeting is listed in Appendix V.

The meeting was adjourned at 7:00 pm on April 9, 2010.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action. In addition, in promulgating its revisions to 10 CFR part 73, the Commission prepared an environmental assessment and published a finding of no significant impact [part 73, Power Reactor Security Requirements, 74 FR 13926 (March 27, 2009)].

The NRC staff's safety evaluation will be provided in the exemption that will be issued as part of the letter to the licensee approving the exemption to the regulation, if granted.

#### *Environmental Impacts of the Alternatives to the Proposed Action*

As an alternative to the proposed actions, the NRC staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the exemption request would result in no change in current environmental impacts. If the proposed action was denied, the licensee would have to comply with the March 31, 2010, implementation deadline. The environmental impacts of the proposed exemption and the "no-action" alternative are similar.

#### *Alternative Use of Resources*

The action does not involve the use of any different resources than those considered in the Final Environmental Statement for Waterford 3, dated September 1981.

#### *Agencies and Persons Consulted*

In accordance with its stated policy, on February 18, 2010, the NRC staff consulted with the Louisiana State official, Ms. Cheryl Chubb of the Radiological Emergency Preparedness & Response offices of the Louisiana Department of Environmental Quality, regarding the environmental impact of the proposed action. The State official had no comments.

#### **Finding of No Significant Impact**

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated January 19, 2010, as supplemented by letter dated February 17, 2010. Portions of the letters dated January 14, 2010, and February 17, 2010, contain Security-Related information and, accordingly, are not available to the public. Other parts of

these documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O-1F21, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site: <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or send an e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

Dated at Rockville, Maryland, this 12th day of March 2010.

For the Nuclear Regulatory Commission.

**Balwant K. Singal,**

Senior Project Manager, Plant Licensing Branch LPL4, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation.

[FR Doc. 2010-6323 Filed 3-22-10; 8:45 am]

**BILLING CODE 7590-01-P**

## **NUCLEAR REGULATORY COMMISSION**

### **Advisory Committee on Reactor Safeguards**

In accordance with the purposes of Sections 29 and 182b of the Atomic Energy Act (42 U.S.C. 2039, 2232b), the Advisory Committee on Reactor Safeguards (ACRS) will hold a meeting on April 8-10, 2010, 11545 Rockville Pike, Rockville, Maryland. The date of this meeting was previously published in the **Federal Register** on Monday, October 14, 2009, (74 FR 52829-52830).

#### **Thursday, April 8, 2010, Conference Room T2-B1, Two White Flint North, Rockville, Maryland**

**8:30 a.m.-8:35 a.m.: Opening Remarks by the ACRS Chairman** (Open)—The ACRS Chairman will make opening remarks regarding the conduct of the meeting.

**8:35 a.m.-10 a.m.: Draft Final Interim Staff Guidance (ISG) DC/COL-ISC-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d)"** (Open/Closed)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding Draft Final DC/COL-ISC-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d)," and the NRC staff's resolution of public comments. [Note: A portion of this session may be

closed to protect unclassified safeguards information pursuant to 5 U.S.C. 552b(c)(3).]

**10:15 a.m.-12 p.m.: Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Review of the U.S. Evolutionary Power Reactor (USEPR) Design Certification Application** (Open/Closed)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and AREVA NP regarding Chapters 2, 4, 5, 8, 10, 12, and 17 of the SER with Open Items associated with the review of the USEPR Design Certification Application.

[Note: A portion of this session may be closed to protect information that is proprietary to AREVA NP and its contractors pursuant to 5 U.S.C. 552b(c)(4).]

**1 p.m.-4 p.m.: Supplement 3 to General Electric (GE) Topical Report NEDC-33173PA, "Applicability of GE Methods to Expanded Operating Domains"** (Open/Closed)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff and GE regarding Supplement 3 to GE Topical Report NEDC-33173PA, "Applicability of GE Methods to Expanded Operating Domains." [Note: A portion of this session may be closed to protect information that is proprietary to GE and its contractors pursuant to 5 U.S.C. 552b(c)(4).]

**4:15 p.m.-7 p.m.: Preparation of ACRS Reports** (Open/Closed)—The Committee will discuss proposed ACRS reports on matters discussed during this meeting. [Note: A portion of this session may be closed to protect unclassified safeguards information pursuant to 5 U.S.C. 552b(c)(3).]

#### **Friday, April 9, 2010, Conference Room T2-B1, Two White Flint North, Rockville, Maryland**

**8:30 a.m.-8:35 a.m.: Opening Remarks by the ACRS Chairman** (Open)—The ACRS Chairman will make opening remarks regarding the conduct of the meeting.

**8:35 a.m.-9:30 a.m.: Final ISG ESP/DC/COL-ISC-015, "Post-Combined License Commitments"** (Open)—The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding Final ESP/DC/COL-ISC-015, "Post-Combined License Commitments" and the NRC staff's resolution of public comments.

**9:45 a.m.-11:15 a.m.: Future ACRS Activities/Report of the Planning and Procedures Subcommittee** (Open/Closed)—The Committee will discuss



the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the Full Committee during future ACRS meetings, including anticipated workload and member assignments. [Note: A portion of this session may be closed pursuant to 5 U.S.C. 552b(c)(2) and (6) to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy.]

*11:15 a.m.–11:30 a.m.: Reconciliation of ACRS Comments and Recommendations (Open)*—The Committee will discuss responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.

*12:30 p.m.–7 p.m.: Preparation of ACRS Reports (Open/Closed)*—The Committee will discuss the proposed ACRS reports on matters discussed during this meeting. [Note: A portion of this session may be closed to protect unclassified safeguards information pursuant to 5 U.S.C. 552b(c)(3).]

**Saturday, April 10, 2010, Conference Room T2–B1, Two White Flint North, Rockville, Maryland**

*8:30 a.m.–12:30 p.m.: Preparation of ACRS Reports (Open/Closed)*—The Committee will continue its discussion of proposed ACRS reports. [Note: A portion of this session may be closed to protect unclassified safeguards information pursuant to 5 U.S.C. 552b(c)(3).]

*12:30 p.m.–1 p.m.: Miscellaneous (Open)*—The Committee will continue its discussion related to the conduct of Committee activities and specific issues that were not completed during previous meetings.

Procedures for the conduct of and participation in ACRS meetings were published in the **Federal Register** on October 14, 2009, (74 FR 52829–52830). In accordance with those procedures, oral or written views may be presented by members of the public, including representatives of the nuclear industry. Persons desiring to make oral statements should notify Mr. Derek Widmayer, Cognizant ACRS Staff (Telephone: 301–415–7366, E-mail: [Derek.Widmayer@nrc.gov](mailto:Derek.Widmayer@nrc.gov)), five days before the meeting, if possible, so that appropriate arrangements can be made to allow necessary time during the meeting for such statements. In view of the possibility that the schedule for ACRS meetings may be adjusted by the Chairman as necessary to facilitate the

conduct of the meeting, persons planning to attend should check with the Cognizant ACRS staff if such rescheduling would result in major inconvenience.

Thirty-five hard copies of each presentation or handout should be provided 30 minutes before the meeting. In addition, one electronic copy of each presentation should be e-mailed to the Cognizant ACRS Staff one day before meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the Cognizant ACRS Staff with a CD containing each presentation at least 30 minutes before the meeting.

In accordance with Subsection 10(d) Public Law 92–463, and 5 U.S.C. 552b(c), certain portions of this meeting may be closed, as specifically noted above. Use of still, motion picture, and television cameras during the meeting may be limited to selected portions of the meeting as determined by the Chairman. Electronic recordings will be permitted only during the open portions of the meeting.

ACRS meeting agenda, meeting transcripts, and letter reports are available through the NRC Public Document Room (PDR) at [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov), or by calling the PDR at 1–800–397–4209, or from the Publicly Available Records System component of NRC's document system which is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> or <http://www.nrc.gov/reading-rm/doc-collections/ACRS/>.

Video teleconferencing service is available for observing open sessions of ACRS meetings. Those wishing to use this service for observing ACRS meetings should contact Mr. Theron Brown, ACRS Audio Visual Technician (301–415–8066), between 7:30 a.m. and 3:45 p.m. (ET), at least 10 days before the meeting to ensure the availability of this service.

Individuals or organizations requesting this service will be responsible for telephone line charges and for providing the equipment and facilities that they use to establish the video teleconferencing link. The availability of video teleconferencing services is not guaranteed.

Dated: March 17, 2010.

**Andrew L. Bates,**

*Advisory Committee Management Officer.*  
[FR Doc. 2010–6325 Filed 3–22–10; 8:45 am]

**BILLING CODE 7590–01–P**

## NUCLEAR REGULATORY COMMISSION

[NRC–2010–0002]

### Sunshine Federal Register Notice

**AGENCY HOLDING THE MEETINGS:** Nuclear Regulatory Commission.

**DATES:** Weeks of March 22, 29, April 5, 12, 19, 26, 2010.

**PLACE:** Commissioners' Conference Room, 11555 Rockville Pike, Rockville, Maryland.

**STATUS:** Public and Closed.

#### Week of March 22, 2010

There are no meetings scheduled for the week of March 22, 2010.

#### Week of March 29, 2010—Tentative

*Tuesday, March 30, 2010*

9:30 a.m. Briefing on Safety Culture (Public Meeting) (Contact: Jose Ibarra, 301–415–2581).

This meeting will be webcast live at the Web address—<http://www.nrc.gov>.

#### Week of April 5, 2010—Tentative

*Tuesday, April 6, 2010*

9 a.m. Periodic Briefing on New Reactor Issues—Design Certifications (Public Meeting) (Contact: Amy Snyder, 301–415–6822).

This meeting will be webcast live at the Web address—<http://www.nrc.gov>.

*Thursday, April 8, 2010*

9:30 a.m. Briefing on Regional Programs—Programs, Performance, and Future Plans (Public Meeting) (Contact: Richard Barkley, 610–337–5065).

This meeting will be webcast live at the Web address—<http://www.nrc.gov>.

#### Week of April 12, 2010—Tentative

*Thursday, April 15, 2010*

9:30 a.m. Briefing on Resolution of Generic Safety Issue (GSI)—191, Assessment of Debris Accumulation on Pressurized Water Reactor (PWR) Sump Performance (Public Meeting) (Contact: Michael Scott, 301–415–0565).

This meeting will be webcast live at the Web address—<http://www.nrc.gov>.

#### Week of April 19, 2010—Tentative

There are no meetings scheduled for the week of April 19, 2010.

#### Week of April 26, 2010—Tentative

*Thursday, April 29, 2010*

9:30 a.m. Briefing on the Fuel Cycle Oversight Process Revisions (Public Meeting) (Contact: Michael Raddatz, 301–492–3108).



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

April 15, 2010

**AGENDA  
572<sup>nd</sup> ACRS MEETING  
MAY 6-8, 2010**

**THURSDAY, MAY 6, 2010, CONFERENCE ROOM T-2B1, TWO WHITE FLINT NORTH,  
ROCKVILLE, MARYLAND**

- 1) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (SAK/EMH)
  - 1.1) Opening statement
  - 1.2) Items of current interest.
  
- 2) 8:35 – 9:30 A.M. Revision 1C to NUREG-1536, "Standard Review Plan for Spent Fuel Storage Systems at a General License Facility" (Open) (MTR/CLB)
  - 2.1) Remarks by the Subcommittee Chairman
  - 2.2) Briefing by and discussions with representatives of the NRC staff regarding proposed Revision 1C to NUREG-1536, "Standard Review Plan for Spent Fuel Storage Systems at a General License Facility," and the NRC staff's resolution of public comments.
  
- 9:30 – 9:45 A.M. \*\*\* BREAK \*\*\***
  
- 3) 9:45 – 11:15 A.M. Preparation for Meeting with the Commission on June 9, 2010 (Open) (SAK, et al. /EMH, et al.)  
Discussion of the topics for meeting with the Commission on June 9, 2010.
  
- 11:15 – 11:30 A.M. \*\*\* BREAK \*\*\***
  
- 4) 11:30 – 12:00 P.M. Meeting with the NRC Chairman (Open) (SAK/EMH)
  - 4.1) Remarks by the ACRS Chairman
  - 4.2) Discussions with NRC Chairman Gregory B. Jaczko on topics of mutual interest.
  
- 12:00 – 1:00 P.M. \*\*\* LUNCH \*\*\***

- 5) 1:00 – 4:00 P.M. BWR Owners Group (BWROG) Topical Report NEDC-33347P, “Containment Overpressure (COP) Credit for Net Positive Suction Head (NPSH)” and the Staff’s Proposed Guidance for the Use of COP (Open/Closed) (WJS/ZA)

5.1) Remarks by the Subcommittee Chairman

5.2) Briefing by and discussions with representatives of the

NRC staff and the BWR Owners Group regarding the staff’s review of Revision 0 to Topical Report NEDC-33347P, “COP Credit for Net Positive Suction Head,” and the NRC staff’s proposed guidance for the use of COP.

**[NOTE: A portion of this session may be closed to protect information that is proprietary to General Electric-Hitachi pursuant to 5 U.S.C. 552b (c)(4).]**

**4:00 – 4:15 P.M.**

**\*\*\* BREAK \*\*\***

- 6) 4:15 – 7:00 P.M. Preparation of ACRS Reports (Open)  
Discussion of proposed ACRS reports on:  
6.1) Revision 1C to NUREG-1536, “Standard Review Plan for Spent Fuel Storage Systems at a General License Facility” (MTR/CLB).  
6.2) BWROG Topical Report NEDC-33347P, “COP Credit for Net Positive Suction Head (NPSH)” and the Staff’s Proposed Guidance for the Use of COP (WJS/ZA).

**FRIDAY, MAY 7, 2010, CONFERENCE ROOM T-2B1, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND**

- 7) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (SAK/EMH)

- 8) 8:35 – 10:00 A.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open/Closed) (SAK/EMH)

8.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the Full Committee during future ACRS meetings.

8.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments.

**[NOTE: A portion of this session may be closed pursuant to 5 U.S.C. 552b (c)(2) and (6) to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy.]**

- 9) 10:00 – 10:15 A.M. Reconciliation of ACRS Comments and Recommendations (Open) (SAK/CS/AFD)  
Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters.
- 10:15 – 10:30 A.M. \*\*\* BREAK \*\*\***
- 10) 10:30 – 12:00 P.M. Preparation of ACRS Reports (Open)  
Continue discussion of the proposed ACRS reports listed under Item 6.
- 12:00 – 1:00 P.M. \*\*\* LUNCH \*\*\***
- 11) 1:00 – 7:00 P.M. Preparation of ACRS Reports (Open)  
Continue discussion of the proposed ACRS reports listed under Item 6. There may be 15 minute breaks at some points during this activity.

**SATURDAY, MAY 8, 2010, CONFERENCE ROOM T-2B1, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND**

- 12) 8:30 – 12:30 P.M. Preparation of ACRS Reports (Open)  
Continue discussion of the proposed ACRS reports listed under Item 6. There may be 15 minute breaks at some points during this activity.
- 13) 12:30 – 1:00 P.M. Miscellaneous (Open) (SAK/EMH)  
Discussion of matters related to the conduct of Committee activities and specific issues that were not completed during previous meetings, as time and availability of information permit.

**NOTES:**

- When appropriate, members of the public and representatives of the nuclear industry may provide their views during the briefings.
- During the days of the meeting, phone number 301-415-7360 should be used in order to access anyone in the ACRS Office.
- Presentation time should not exceed 50 percent of the total time allocated for a given item. The remaining 50 percent of the time is reserved for discussion.
- Thirty five (35) hard copies and one (1) electronic copy of the presentation materials should be provided to the ACRS in advance of the briefing.
- One (1) electronic copy of each presentation should be emailed to the Designated Federal Official 1 day before the meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the Designated Federal Official with a CD containing each presentation at least 30 minutes before the meeting.

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
571<sup>st</sup> FULL COMMITTEE MEETING

April ~~9~~ 8-10, 2010

PLEASE PRINT

TODAY'S DATE: April 8, 2010

	<u>NAME</u>	<u>NRC ORGANIZATION</u>
1	JERRY ALISON	NRC/DNR
2	THOMAS FREDSTUE	NRC/DEIP
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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
571<sup>st</sup> FULL COMMITTEE MEETING

April 8-10, 2010

PLEASE PRINT

TODAY'S DATE: April 8, 2010

NAME

NRC ORGANIZATION

1 Getachew Tesfaye  
2 WM "BUTCH" BURTON

~~NRC/NRO/DNRL/NARP~~  
~~NRO/NRGA~~

3 James Steckel

~~NRO/DNRL/NARP~~

4 Jason Jennings

~~NRO/DNRL/NARP~~

5 TARUN ROY

~~NRO/DNRL/NARP~~

6 Pete Hearn

~~NRO/DNRL/NARP~~

7 JASON CARNEAL

~~NRO/DNRL/NARP~~

8 Peter Yarsky

~~NRR/DSS/SLPB~~

9 ANTHONY MENDICOLA

~~NRR/DSS/SLPB~~

10 STEPHEN PHILPOTT

~~NRR/DPR/PLPB~~

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
571<sup>st</sup> FULL COMMITTEE MEETING

April 8-10, 2010

PLEASE PRINT

TODAY'S DATE: April 8, 2010

	<u>NAME</u>	<u>AFFILIATION</u>
1	Neil Haggerty	NuStart
2	NILEKANI VISAY M	NEI.
3	Jerry G. Sims	NPP Sec. Cons. LLC/NEI
4	RON REYNOLDS	US-APWR (MNES)
5	Ronda Pederson	AREVA
6	ROBERT REIBLE	Luminant
7	DOUG WATERS	NEI
8	Jay Patel	NRO/DNRL/NARP
9	Pete Hearn	NRO/DNRL/NARP
10	Brian M'Donogh	AREVA
11	Tim Stack	AREVA
12	Brian R Moore	GNF
13	Russ Fawcett	GNF
14	Don Notigan	PSEG
15	VERNON W. MILLS	GNF
16	Jens Andersen	GEH
17	Patricia Campbell	GEH
18	Jim Harrison	GEH
19	GARY PAVIS	CENG
20	Theresa Darling	CENG
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**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, DC 20555 - 0001**

Revised May 3, 2010

**AGENDA  
572<sup>nd</sup> ACRS MEETING  
MAY 6-8, 2010**

**THURSDAY, MAY 6, 2010, CONFERENCE ROOM T-2B1, TWO WHITE FLINT NORTH,  
ROCKVILLE, MARYLAND**

- 1) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (SAK/EMH)
  - 1.1) Opening statement
  - 1.2) Items of current interest
  
- 2) 8:35 – 9:30 A.M. Revision 1C to NUREG-1536, "Standard Review Plan for Spent Fuel Storage Systems at a General License Facility" (Open) (MTR/CLB)
  - 3.1) Remarks by the Subcommittee Chairman
  - 3.2) Briefing by and discussions with representatives of the NRC staff regarding proposed Revision 1C to NUREG-1536, "Standard Review Plan for Spent Fuel Storage Systems at a General License Facility," and the NRC's staff resolution of public comments
  
- 9:30 – 9:45 A.M. \*\*\* BREAK \*\*\***
  
- 3) 9:45 – 11:15 A.M. Preparation for Meeting with the Commission on June 9, 2010 (Open) (SAK, et al. /EMH, et al.)  
Discussion of the topics for meeting with the Commission on June 9, 2010
  
- 11:15 – 11:30 A.M. \*\*\* BREAK \*\*\***
  
- 4) 11:30 – 12:00 P.M. Meeting with the NRC Chairman (Open) (SAK/EMH)
  - 4.1) Remarks by the ACRS Chairman
  - 4.2) Discussions with NRC Chairman Gregory B. Jaczko on topics of mutual interest
  
- 12:00 – 1:00 P.M. \*\*\* LUNCH \*\*\***



- 5) 1:00 – 4:00 P.M. BWR Owners Group (BWROG) Topical Report NEDC-33347P, “Containment Overpressure (COP) Credit for Net Positive Suction Head (NPSH),” and the Staff’s Proposed Guidance for the Use of COP (Open/Closed) (WJS/ZA)  
5.1) Remarks by the Subcommittee Chairman  
5.2) Briefing by and discussions with representatives of the  
  
NRC staff and the BWR Owners Group regarding the staff’s review of Revision 0 to Topical Report NEDC-33347P, “COP Credit for Net Positive Suction Head,” and staff’s proposed guidance for the use of COP

**[NOTE: A portion of this session may be closed to protect information that is proprietary to General Electric-Hitachi pursuant to 5 U.S.C. 552b (c)(4).]**

**4:00 – 4:15 P.M. \*\*\* BREAK \*\*\***

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Discussion of proposed ACRS reports on:  
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**FRIDAY, MAY 7, 2010, CONFERENCE ROOM T-2B1, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND**

- 7) 8:30 – 8:35 A.M. Opening Remarks by the ACRS Chairman (Open) (SAK/EMH)  
8) 8:35 – 9:30 A.M. Future ACRS Activities/Report of the Planning and Procedures Subcommittee (Open/Closed) (SAK/EMH)  
8.1) Discussion of the recommendations of the Planning and Procedures Subcommittee regarding items proposed for consideration by the Full Committee during future ACRS meetings  
8.2) Report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business, including anticipated workload and member assignments

**[NOTE: A portion of this session may be closed pursuant to 5 U.S.C. 552b (c)(2) and (6) to discuss organizational and personnel matters that relate solely to internal personnel rules and practices of ACRS, and information the release of which would constitute a clearly unwarranted invasion of personal privacy.]**

- 9) 3:00 – 3:15 P.M. Reconciliation of ACRS Comments and Recommendations  
(Open) (SAK/CS/AFD)  
Discussion of the responses from the NRC Executive Director for Operations to comments and recommendations included in recent ACRS reports and letters

**3:15 – 3:30 P.M. \*\*\* BREAK \*\*\***

- 10) 3:30 – 7:00 P.M. Preparation of ACRS Reports (Open)  
Continue discussion of the proposed ACRS reports listed under Item 6

**SATURDAY, MAY 8, 2010, CONFERENCE ROOM T-2B1, TWO WHITE FLINT NORTH, ROCKVILLE, MARYLAND**

- 11) 8:30 – 12:30 P.M. Preparation of ACRS Reports (Open)  
Continue discussion of the proposed ACRS reports listed under Item 6. There may be 15 minute breaks at some points during this activity.
- 12) 12:30 – 1:00 P.M. Miscellaneous (Open) (SAK/EMH)  
Discussion of matters related to the conduct of Committee activities and specific issues that were not completed during previous meetings, as time and availability of information permit.

**NOTES:**

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LIST OF HANDOUTS  
571<sup>ST</sup> ACRS MEETING  
APRIL 8-10, 2010

- I. Opening Remarks by the ACRS Chairman
  1. Opening Remarks
  2. Items of Interest
  
- II. Draft Final Interim Staff Guidance (ISG) DC/COL-ISG-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d)"
  3. Table of Contents
  4. Proposed Meeting Agenda
  5. Status Report
  6. Interim Staff Guidance DC/COL-ISG-016, "Compliance with 10 CFR 50.54(hh)(2) and 10 CFR 52.80(d) Loss of Large Areas of the Plant due to Explosions or Fires from a Beyond-Design Basis Event."
  7. NEI 06-12, Revision 3, "B.5.b Phase 2 & 3 Submittal Guideline," September 2009.
  8. Security rulemaking published in the *Federal Register* on March 27, 2009 (74 FR 13926).
  9. Previous ACRS Conclusions and Recommendations Related to Aircraft Attack (as of December 2009)
  
- III. Selected Chapters of the Safety Evaluation Report (SER) with Open Items Associated with the Review of the U.S. Evolutionary Power Reactor (USEPR) Design Certification Application
  10. Proposed Agenda
  11. Status Report
  12. EPR Design Certification Application – Safety Evaluation Report with Open Items for Chapter 2, "Site Characteristics," August 2009
  
- IV. Supplement 3 to General Electric (GE) Topical Report NEDC-33173PA, "Applicability of GE Methods to Expanded Operating Domains"
  13. Proposed Schedule
  14. Status Report
  
- V. Final ISG ESP/DC/COL-ISG-015, "Post-Combined License Commitments"
  15. Proposed Schedule
  16. Status Report
  17. Regulatory Guide 1.206, "Regulatory Guide for Combined License Applications for Nuclear Power Plants," dated June 2007
  18. Final Interim Staff Guidance ESP/DC/COL-ISG-015, "Final Interim Staff Guidance on Post-Combined License Commitments."



# **Presentation to the ACRS Full Committee**

ESP/DC/COL-ISG-015

## **Interim Staff Guidance on Post-Combined License Commitments**

April 9, 2010

Jerry Wilson, Earl R. Libby

## **Purpose:**

- Supplements RG 1.206 and provides a new appendix to SRP 1.0
- Guidance on the completion of action items and information items identified in the Final Safety Analysis Report (FSAR) for a certified design
- Guidance on the completion of action items and information items identified during review of the COL application
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## Guidance for New Reactors

- Tracking and Completion of Post-License Commitment with ITAAC
  - Successful completion of the ITAAC provides reasonable assurance the facility has been constructed and will be operated in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations
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## **Guidance for New Reactors**

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  - Provide updated information in the FSAR or other licensing basis documents
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  - Specific design basis information updated on a recurring basis, FSAR update schedule

## Summary

- Three locations for Post-Licensing Commitments
  - Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) (Part 52.99)
  - A License Condition (Part 50.54)
  - Information commitment within the Final Safety Analysis Report (FSAR) or other licensing basis document (Part 50.71(e))



**AREVA NP Inc.**

**Presentation to ACRS  
U.S. EPR Design  
Certification Application**

Brian A. McIntyre  
Design Certification Project Manager

Timothy G. Stack  
Technical Integration Manager

April 8, 2010

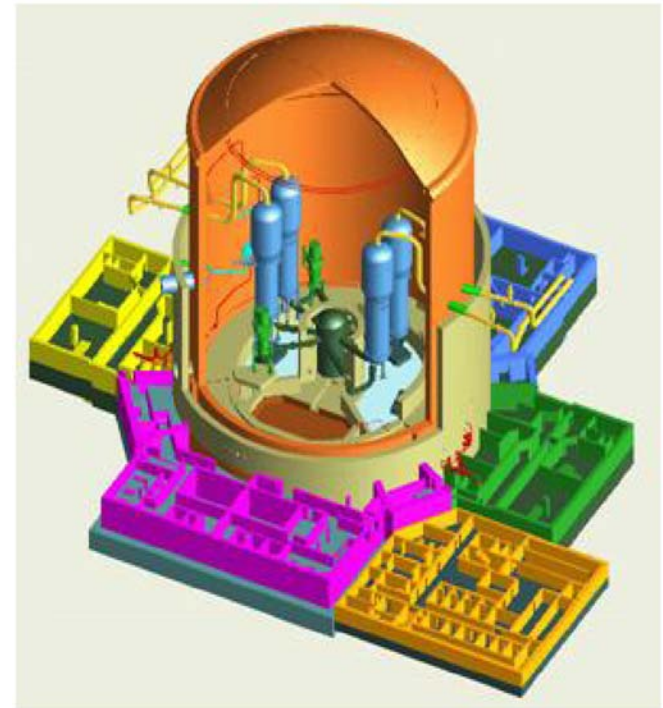




- ▶ **Introduction**
- ▶ **Overview of the U.S. EPR Design**
  - ◆ **EPR Development Objectives**
  - ◆ **Major Design Features**
  - ◆ **Main Safety Systems**
  - ◆ **Protection From External Hazards**
  - ◆ **Severe Accident Mitigation**
- ▶ **Overview of U.S. EPR Design Certification Application**

# EPR Development Objectives

- ▶ **Evolutionary design based on existing PWR construction experience, R&D, and operating experience**
- ▶ **Improved economics**
  - ◆ Reduce generation cost by at least 10%
  - ◆ Simplify operations and maintenance
  - ◆ 60-year design life
- ▶ **Improved safety**
  - ◆ Reduce occupational exposure and LLW
  - ◆ Increase design margins
  - ◆ Increased redundancy & physical separation of safety trains
  - ◆ Reduce core damage frequency (CDF)
  - ◆ Accommodate severe accidents and external hazards with no long-term local population effect



# Major Design Features - Overview



## ► Nuclear Island

- ◆ Proven Four-Loop RCS Design
- ◆ Four-Train Safety Systems
- ◆ Double Containment
- ◆ In-Containment Borated Water Storage
- ◆ Severe Accident Mitigation
- ◆ Separate Safety Buildings
- ◆ Advanced 'Cockpit' Control Room

## ► Electrical

- ◆ Shed Power to House Load
- ◆ Four Emergency DGs
- ◆ Two Smaller, Diverse SBO DGs

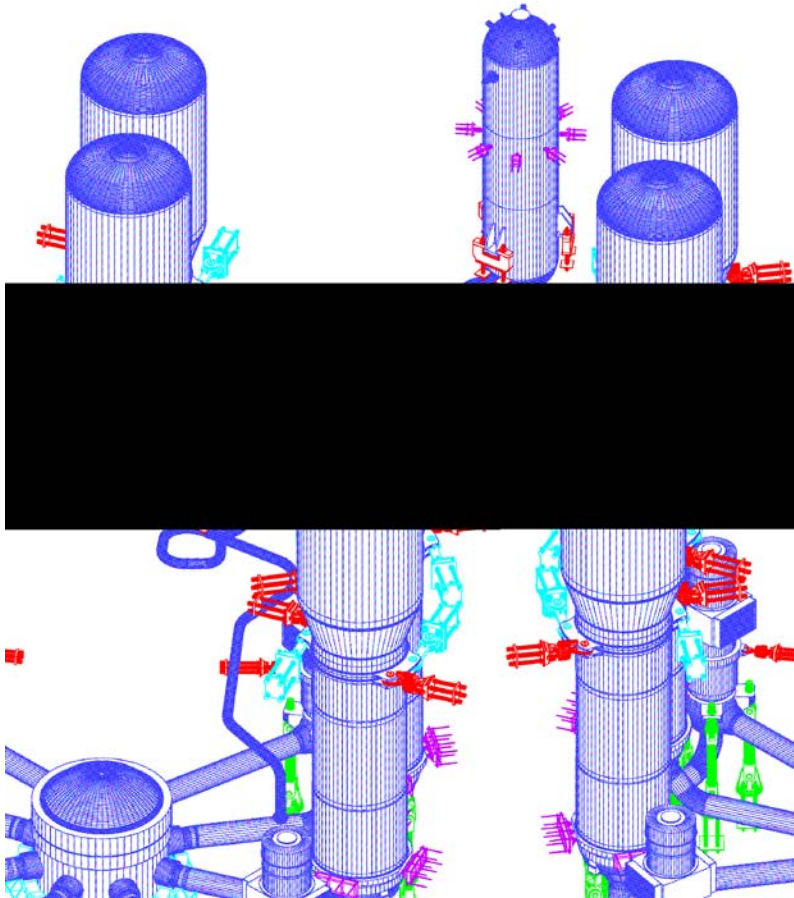
## ► Site Characteristics

- ◆ Airplane Crash Protection (military and commercial)
- ◆ Explosion Pressure Wave

***Reflects full benefit of operating experience and 21<sup>st</sup> century requirements.***



# Major Design Features



- ▶ **Conventional 4-loop PWR design, proven by decades of design, licensing and operating experience.**
- ▶ **NSSS component volumes increased compared to existing PWRs, increasing operator grace period for many transients and accidents**

***A solid foundation of operating experience.***

# The Four Train (N+2) Concept



***Each safety train is independent and located within a physically separate building.***

# Main Safety Systems

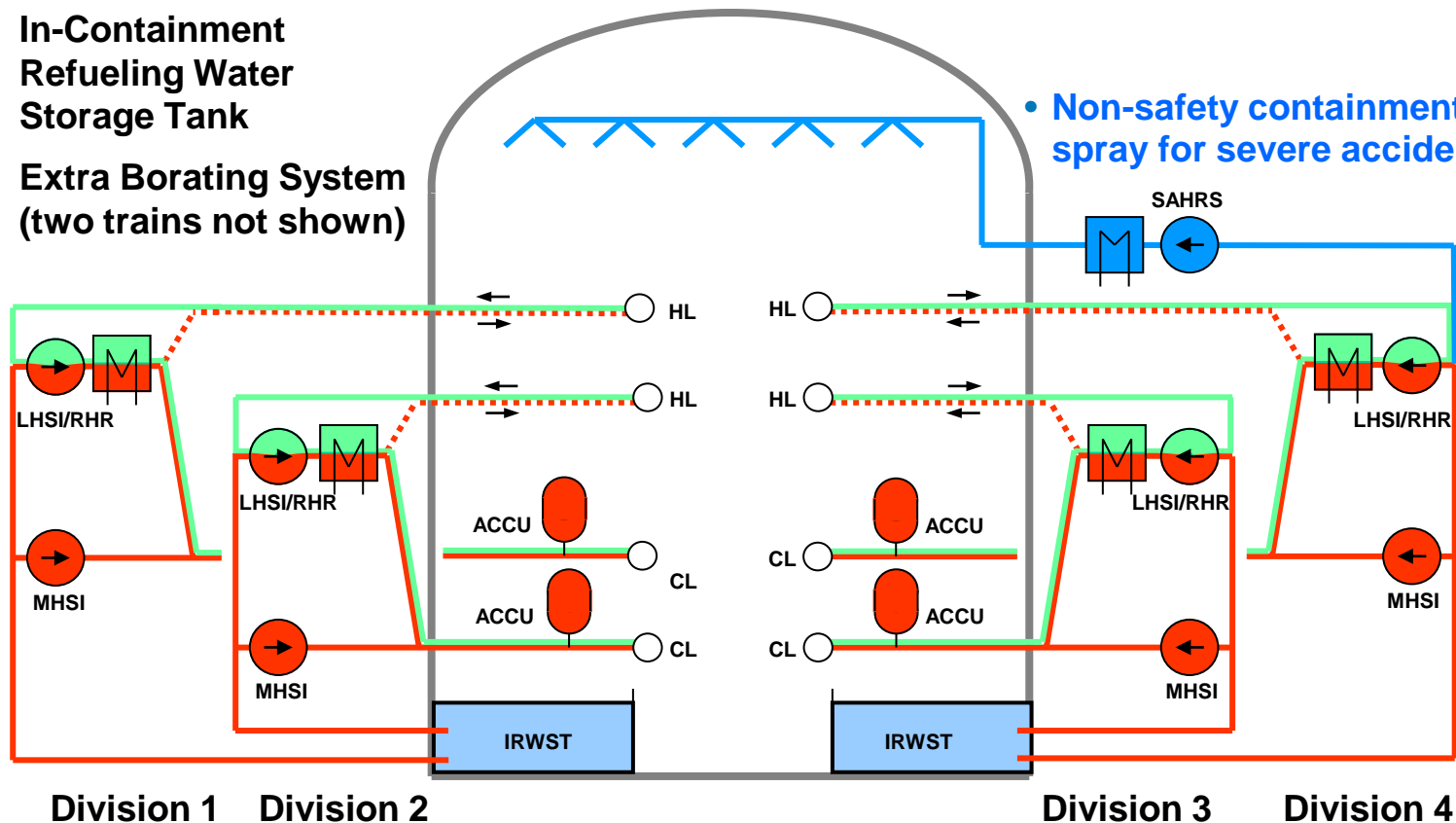
## ► Four train Safety Injection System (SIS)

- ◆ Medium head SI pumps
- ◆ Combined Residual Heat Removal System / Low Head Safety Injection

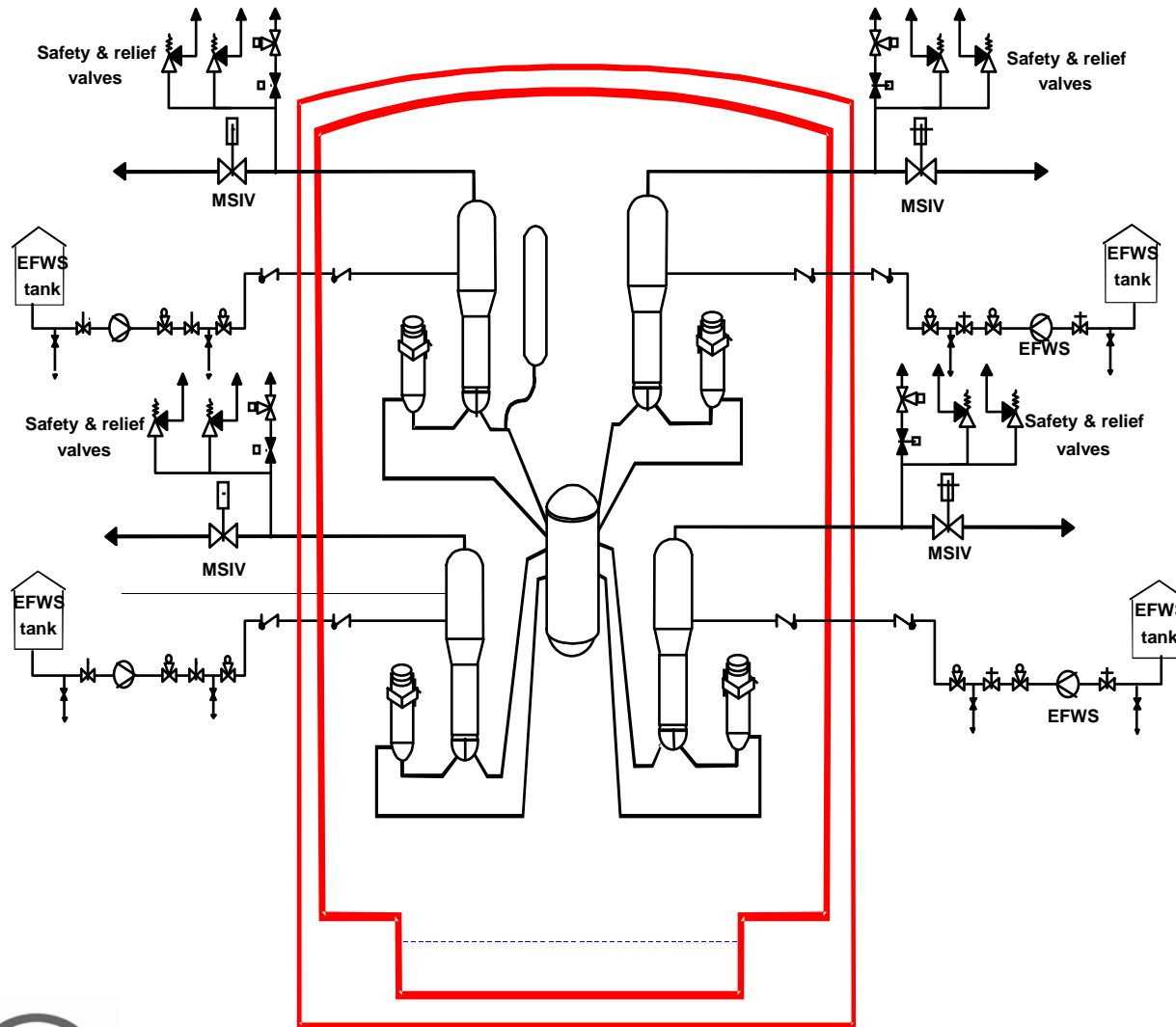
## ► In-Containment Refueling Water Storage Tank

## ► Extra Borating System (two trains not shown)

- Non-safety containment spray for severe accident



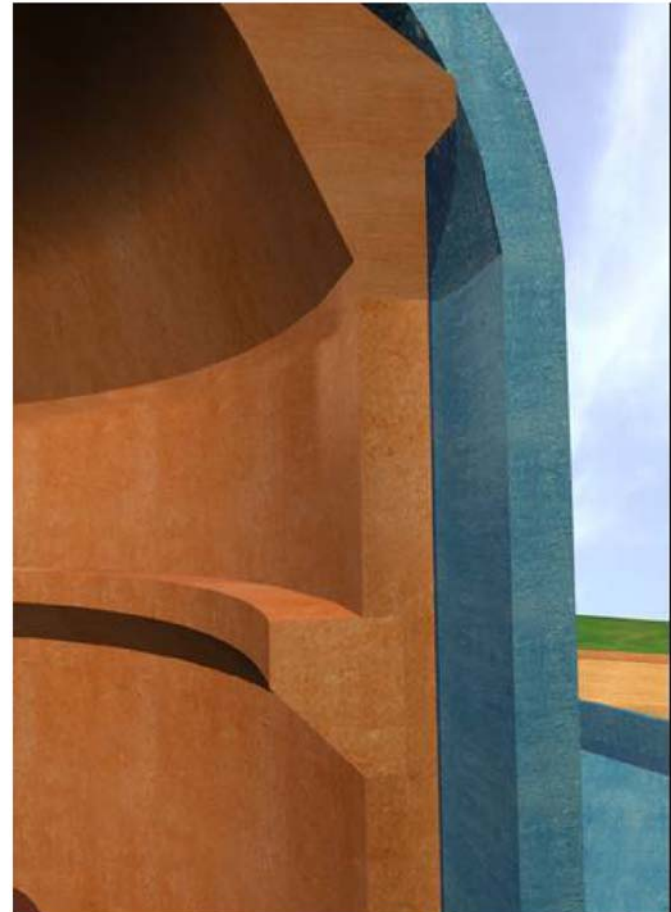
# Main Safety Systems Secondary Side



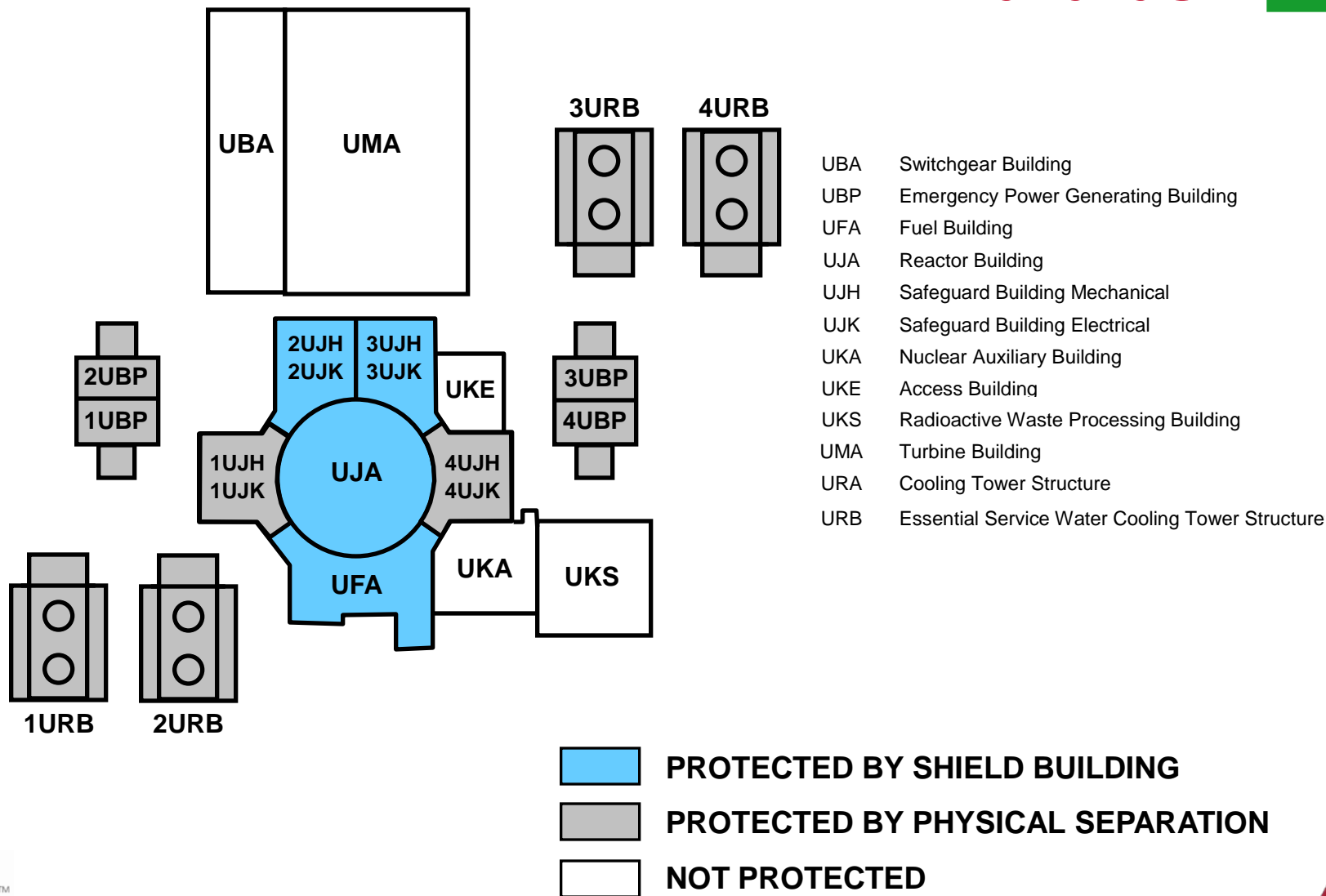
- ▶ Safety-related main steam relief train
- ▶ Four separate Emergency Feed Water Systems (EFWS)
- ▶ Separate power supply for each
- ▶ 2/4 EFWS also powered by Station Black Out (SBO) diesels
- ▶ Interconnecting headers at EFWS pump suction & discharge

# Protection From External Hazards Shielded Containment

- ▶ Inner wall post-tensioned concrete with steel liner
- ▶ Outer wall reinforced concrete
- ▶ Protection against airplane crash
- ▶ Protection against external explosions
- ▶ Annulus filtered to reduce radioisotope release



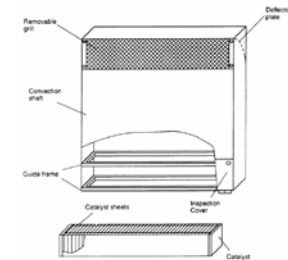
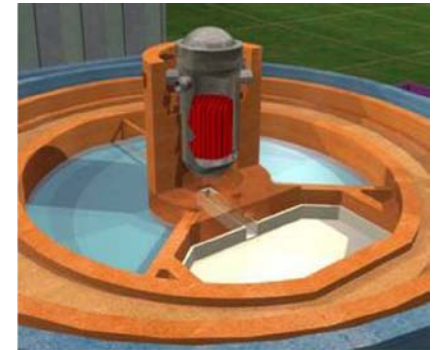
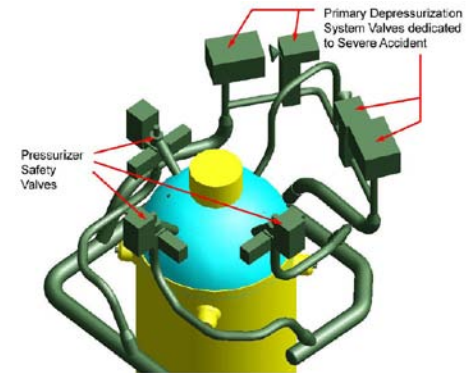
# Protection From External Hazards





# Severe Accident Mitigation

- ▶ **Prevention of high-pressure melt-through using Primary Depressurization System**
- ▶ **Passive ex-vessel melt stabilization, conditioning and cooling**
- ▶ **Long-term melt cooling and containment protection using active cooling system**
- ▶ **Control of H<sub>2</sub> concentration using passive autocatalytic recombiners**



# U.S. EPR Design Certification Application



- ▶ **U.S. EPR design reflects an evolutionary, active plant design**
  - ◆ Exemptions and exceptions minimized
  - ◆ No RTNSS
- ▶ **Applies proven analytical methodologies**
- ▶ **Preapplication activities**
  - ◆ Unique Design Features technical report developed
  - ◆ Meetings with technical staff
  - ◆ Topical reports submitted in selected areas
  - ◆ Established local AREVA NP office
- ▶ **FSAR format and content is consistent with key NRC guidance documents**
  - ◆ Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants (LWR Edition)”
  - ◆ NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants"
    - Technical Report Summary provided



# Chapter 2: Site Characteristics



## ► Topics

- ◆ Site characteristics
  - ◆ Geography and demography
  - ◆ Nearby industrial, transportation, and military facilities
  - ◆ Meteorology
  - ◆ Hydrologic engineering
  - ◆ Geology, seismology, and geotechnical engineering
- U.S. EPR design is based on a set of conservatively established design parameters
- Chapter 2 provides list of assumed design parameters for comparison with site-specific data and characteristics by a COL applicant

# Chapter 4: Reactor



## ► Topics

- ◆ Fuel System Design
  - ◆ Nuclear Design
  - ◆ Thermal-Hydraulic Design
  - ◆ Reactor Materials
  - ◆ Functional Design of Reactivity Control Systems
- U.S. EPR design features are fundamentally the same as previous PWR designs
- Design methods and codes for mechanical, nuclear, and thermal hydraulic designs approved for use in ANP-10263PA
- Key differences from previous PWR designs include:
- ◆ 14-foot active fuel length
  - ◆ Stainless steel “heavy” reflector
  - ◆ Aeroball Measurement System used for calibration of core monitoring neutronics computer codes and fixed incore Co-59 self-powered neutron detectors (SPND)
  - ◆ Online monitoring of DNB and LHGR accomplished through power distribution reconstruction from SPNDs

# Chapter 5: Reactor Coolant System and Connected Systems



## ► Topics

- ◆ Integrity of the reactor coolant pressure boundary
- ◆ Reactor vessel
- ◆ Component and subsystem design

## ► U.S. EPR design is typical of four-loop PWR designs

- ◆ Four U-tube steam generators
- ◆ Four reactor coolant pumps

## ► Key differences

- ◆ No reactor pressure vessel lower head penetrations
- ◆ Reactor coolant pump shaft seal isolation for station blackout
- ◆ Pressurizer safety relief valves provide overpressure protection at power and at low temperature
- ◆ Alloy 690

# Chapter 8: Electric Power



## ► Topics

- ◆ Offsite power system
- ◆ Onsite power system
- ◆ Station blackout

## ► U.S. EPR design features fundamentally same as previous reactor designs

- ◆ Two independent offsite feeds
- ◆ Degraded voltage protection for emergency buses

## ► Key differences

- ◆ Four Emergency Diesel Generators (Class 1E) and four 2-hour Uninterruptible Power Supplies (Class 1E)
- ◆ Alternate electrical feed configuration to facilitate on-line maintenance
- ◆ No intervening non-safety buses in Class 1E distribution system
- ◆ Two SBO diesel generators as Alternate AC source
- ◆ No fast transfer of plant loads during startup, shutdown, or plant trip
- ◆ Island mode operation

# Chapter 10: Steam and Power Conversion System



## ► Topics

- ◆ Turbine generator
- ◆ Main steam supply system
- ◆ Other features of steam and power conversion system
- ◆ Emergency feedwater system

## ► U.S. EPR design features fundamentally the same as previous designs

- ◆ Seven stages of regenerative feedwater heating
- ◆ Two stages of reheat
- ◆ Multi-pressure condenser

## ► Key differences

- ◆ Single Flow High Pressure (HP) Turbine and Single Flow Intermediate Pressure (IP) Turbine in a common casing
- ◆ Two redundant and diverse electrical overspeed trip systems for the Turbine Generator
- ◆ Safety-grade Main Steam Relief Train (MSRT) for overpressure protection and safety-grade secondary depressurization
- ◆ Stand alone Startup/Shutdown Feedwater System
- ◆ Four motor-driven Emergency Feedwater pumps

# Chapter 12: Radiation Protection



## ► Topics

- ◆ Ensuring that occupational radiation exposures are as low as reasonably achievable
- ◆ Radiation sources
- ◆ Radiation protection design features
- ◆ Dose assessment
- ◆ Operational radiation protection program (COL applicant responsibility)
- **U.S. EPR design reflects operating experience and implements As Low as Reasonably Achievable (ALARA) principles in the design process**
  - ◆ Physical plant layout that includes compartmentalization and dedicated ventilation
  - ◆ Material selection reduces activation/corrosion products
  - ◆ Permanent shielding
  - ◆ Minimization of contamination following industry lessons learned
  - ◆ ALARA applied in the design process
- **The occupational dose of 50 person-rem demonstrates that ALARA has been an integral part of the U.S. EPR design process**

# Chapter 17: Quality Assurance



## ► Three main topics

### ◆ Quality Assurance Program Description

- Addressed in “AREVA NP Inc. Quality Assurance Plan (QAP) for Design Certification of the U.S. EPR Topical Report,” ANP-10266A
- Based on 18-point criteria of 10 CFR 50 Appendix B and ANSI/ASME NQA-1-1994
- Prepared using guidance provided in NUREG-0800, Standard Review Plan, Section 17.5

### ◆ Reliability Assurance Program

- Purpose is to maintain reliability of risk-significant SSCs
- Prepared using the guidance provided in NUREG-0800, Standard Review Plan, Section 17.4

### ◆ Maintenance Rule Program

- Purpose is to monitor effectiveness of plant maintenance activities
- COL applicant will describe program for Maintenance Rule implementation

# List of Acronyms

- ▶ **AC – Alternating Current**
- ▶ **ACCU – Accumulator**
- ▶ **ALARA – As Low As Reasonably Achievable**
- ▶ **CDF – Core Damage Frequency**
- ▶ **CL – Cold Leg**
- ▶ **COL – Combined Operating License**
- ▶ **DG – Diesel Generator**
- ▶ **DNB – Departure from Nucleate Boiling**
- ▶ **EFWS – Emergency Feedwater System**
- ▶ **ESF – Engineered Safety Features**
- ▶ **HL – Hot Leg**
- ▶ **HP – High Pressure**
- ▶ **IP – Intermediate Pressure**
- ▶ **IRWST – In-containment Refueling Water Storage Tank**
- ▶ **LHGR – Linear Heat Generation Rate**
- ▶ **LHSI – Low Head Safety Injection System**
- ▶ **LLW – Low Level Waste**
- ▶ **MHSI – Medium Head Safety Injection System**
- ▶ **MSRT – Main Steam Relief Train**
- ▶ **MSIV – Main Steam Isolation Valve**
- ▶ **PWR – Pressurized Water Reactor**
- ▶ **RCS – Reactor Coolant System**
- ▶ **RHR – Residual Heat Removal**
- ▶ **RTNSS - Regulatory Treatment of Non-Safety Systems**
- ▶ **SAHRS – Severe Accident Heat Removal System**
- ▶ **SBO – Station Blackout**
- ▶ **SIS – Safety Injection System**
- ▶ **SG – Steam Generator**
- ▶ **SPND - Self-powered Neutron Detectors**
- ▶ **SSC - Structures, Systems and Components**







# Presentation to the ACRS Full Committee - 571<sup>st</sup> Meeting

**Briefing on EPR Design Certification Application Safety Evaluation  
Report with Open Item for Chapters 2, 4, 5, 8, 10, 12, and 17**

**Getachew Tesfaye  
Project Manager**

**April 8, 2010**

# Major Milestones Chronology

12/02/2004	Pre-application activities began
12/11/2007	Design Certification Application submitted
02/25/2008	Application accepted for review (docketed)
03/26/2008	Review scheduled published
01/29/2009	Phase 1 review completed
03/19/2009	Revised schedule published
05/29/2009	U.S. EPR FSAR, Revision 1 submitted
06/25/2009	Revised schedule published
Aug 09 to Mar,10	Phase 2 review completed for Chapters 2,4, 5, 8,10, 11, 12, 16, 17 and 19. Phase 3 is completed for Chapters 2, 4, 5, 8, 10, 12, and 17
02/16/2010	Revised schedule published

# Review Schedule

Task	Target Date
<b>Phase 1</b> - Preliminary Safety Evaluation Report (SER) and Request for Additional Information (RAI)	Completed
<b>Phase 2</b> - SER with Open Items	December 21, 2010
<b>Phase 3</b> – Advisory Committee on Reactor Safeguards (ACRS) Review of SER with Open Items	February 25, 2011
<b>Phase 4</b> - Advanced SER with No Open Items	July 2011
<b>Phase 5</b> - ACRS Review of Advanced SER with No Open Items	October 2011
<b>Phase 6</b> – Final SER with No Open Items	December 2011
<b>Rulemaking</b>	June 2012

# Review Strategy

- Pre-application activities
- Frequent interaction with the applicant
  - ♦ Teleconferences
  - ♦ Audits
  - ♦ Public meetings
- Use of Electronic RAI System (eRAI)
- Phase discipline

# Summary of SER with OI: Chapter 2

## Site Characteristics

SRP Section/Application Section		Number of RAI Questions	Number of SER Open Items
2.0	Site Characteristics	2	2
2.1	Geography and Demography	0	0
2.2	Nearby Industrial, Transportation, and Military Facilities	0	0
2.3	Meteorology	31	10
2.4	Hydrologic Engineering	4	0
2.5	Geology, Seismology, and Geotechnical Engineering	8	1
2.6	COL Information Items	0	0
Totals		45	13

# Summary of SER with OI: Chapter 4 Reactor

SRP Section/Application Section		Number of RAI Questions	Number of SER Open Items
4.2	Section Title Fuel System Design	15	2
4.3	Section Title Nuclear Design	24	2
4.4	Section Title Thermal-Hydraulic Design	37	3
4.5.1	Section Title Control Rod Drive System Structural Materials	7	2
4.5.2	Section Title Reactor Internals and Core Support Materials	11	3
4.6	Section Title Functional Design of Reactivity Control Systems	10	2
Totals		104	14

# Summary of SER with OI: Chapter 5 Reactor Coolant System and Connected Systems

SRP Section/Application Section		Number of RAI Questions	Number of SER Open Items
5.2	Section Title Integrity of the Reactor Coolant Pressure Boundary	51	12
5.3	Section Title Reactor Vessel	27	8
5.4	Section Title Component and Subsystem Design	49	5
Totals		127	25



# Summary of SER with OI: Chapter 8 Electric Power

SRP Section/Application Section		Number of RAI Questions	Number of SER Open Items
8.1	Introduction	4	0
8.2	Offsite Power System	7	0
8.3.1	Alternating Current (AC) Power Systems (Onsite)	24	0
8.3.2	Direct Current (DC) Power Systems (Onsite)	5	0
8.4	Station Blackout	9	0
Totals		49	0

# Summary of SER with OI: Chapter 10 Steam and Power Conversion Systems

SRP Section/Application Section		Number of RAI Questions	Number of SER Open Items
10.2	Turbine-Generator	7	1
10.2.3	Turbine Rotor Integrity	23	7
10.3	Main Steam Supply System	2	0
10.3.6	Steam and Feedwater System Materials	12	2
10.4.1 10.4.2 10.4.3 10.4.4 10.4.5	Main Condensers, Main Condenser Evacuation System, Turbine Gland Sealing System, Turbine Bypass System, Circulating Water System	5	0
10.4.6	Condensate Polishing System	6	0
10.4.7	Condensate and Feedwater System	3	0
10.4.8	Steam Generator Blowdown System	4	0
10.4.9	Emergency Feedwater System	13	2
Totals		75	12

# Summary of SER with OI: Chapter 12

## Radiation Protection

SRP Section/Application Section		Number of RAI Questions	Number of SER Open Items
12.1	Ensuring that Occupational Radiation Exposures are ALARA	0	0
12.2	Radiation Sources	6	2
12.3-12.4	Radiation Protection Design Features	18	7
12.5	Operational Radiation Protection Program	3	1
Totals		26	10

# Summary of SER with OI: Chapter 17

## Quality Assurance

SRP Section/Application Section		Number of RAI Questions	Number of SE Open Items
17.0	Quality Assurance and Reliability Assurance	0	0
17.1	Quality Assurance During Design	0	0
17.2	Quality Assurance During the Operations Phases	0	0
17.3	Quality Assurance Program Description	0	0
17.4	Reliability Assurance Program	22	1
17.5	Quality Assurance Program Description	2	1
17.6	Description of Applicant's Program for Implementation of 10 CFR 50.65, the Maintenance Rule	2	0
<b>Totals</b>		<b>26</b>	<b>2</b>

# ACRS Phase 3 Review Plan

FSAR Chapters Grouped by Phase 2 Completion Date							
Group	Chapters	Chapter Issuance (Phase 2)	ACRS Meeting (Phase 3)	Group	Chapters	Chapter Issuance (Phase 2)	ACRS Meeting (Phase 3)
1A	2	09/21/2009	11/03/2009, Done	3A	13	06/01/2010	TBD
	8	07/10/2009			15	05/11/2010	
1B	10	09/04/2009	11/19/2009, Done	3B	7	08/02/2010	TBD
	12	10/09/2009			18	08/02/2010	
2A	17	01/12/2010	02/18/2010 02/19/2010 17 Done 19 will be completed on 04/21/2010	4A	6	09/15/2010	TBD
	19	01/15/2010			9	09/09/2010	
2B	4	02/03/2010	03/03/2010, Done	4B			TBD
	5	02/03/2010			1	10/29/2010	
2C	11	03/01/2010	04/06/2010 Done		3	10/29/2010	
	16	03/01/2010			14	10/29/2010	
Closing: ▪General Plant Description (final) and summation of open items ▪Cross-cutting issues and re-visit earlier chapters as needed							



**U.S.NRC**

UNITED STATES NUCLEAR REGULATORY COMMISSION

*Protecting People and the Environment*

**NRC Staff Review of  
NEDC-33173P, Supplement 3  
“Supplement for GNF2 Fuel”**

**Concluding Remarks**

Dr. Peter Yarsky

NRR/DSS/SNPB

# Concluding Remarks

- IMLTR Supplement 3 seeks to extend NRC approval to cover the GNF2 fuel design
- Several evolutionary design features were incorporated in GNF2 to improve fuel performance

# Scope of Staff Review

- The staff review addressed the applicability of interim methods to calculations with GNF2 fuel
- Addressed all topical areas addressed in the staff review of the IMLTR



# Review Determination

- GNF2 design features do not pose an inherent challenge to the capability of the analysis methods
- Qualification basis of the methods for GNF2 is the same as previously reviewed
- Performance of the methods is essentially the same

## Review Outcome

- The staff's SE extends applicability of the IMLTR and the associated SE (including limitations and conditions) to GNF2
- Limitation 22 will be revised accordingly to document staff approval up to designs including GNF2



# **Presentation to the ACRS Full Committee**

ESP/DC/COL-ISG-015

## **Interim Staff Guidance on Post-Combined License Commitments**

April 9, 2010

Jerry Wilson, Earl R. Libby

## **Purpose:**

- Supplements RG 1.206 and provides a new appendix to SRP 1.0
- Guidance on the completion of action items and information items identified in the Final Safety Analysis Report (FSAR) for a certified design
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