NRC LIAISON REPORT

The Federal Energy Regulatory Commission Thursday approved the first mandatory, enforceable standards designed to guard against cyber-attacks on the U.S. bulk power system, requiring users, owners and operators of the nation's electricity grid to enact new training, physical security and asset recovery plans to protect against the threat.

Senate Confirms Jaczko, Svinicki To NRC SeatsThe Senate confirmed Nuclear Regulatory Commission member Gregory Jaczko to a new term and confirmed GOP nominee Kristine Svinicki for her first term at NRC, ending a prolonged standoff between the White House and Senate Majority Leader Harry Reid over those and dozens of other nominations that have been held up for weeks.

DOE Refuses To Reconsider Power Line Corridors The Energy Department Thursday refused requests by state and local officials, environmentalists and affected community groups to re-examine the parameters of its two "national interest electric transmission corridors," thus clearing the way for utilities to seek federal override of state and local opposition to new power lines located in those DOE-designated areas in the Southwest and Mid-Atlantic. While acknowledging state and local concerns about federal intervention in power line siting decisions, DOE said it was carrying out directives from Congress in the Energy Policy Act of 2005 (EPACT), which required DOE to establish the corridors and granted the Federal Energy Regulatory Commission "backstop" authority to approve power lines in those corridors that are blocked by state and local officials.

Grid Security A video released in October 2007 by CNN illustrates the potential danger to the power grid, experts say. While in the past, most had imagined a cyberattack might shut down patches of the US grid for a few days at worst, But the video shows a demonstration by the Idaho National Laboratory that a large electric generator shaking violently, spraying metal parts, and spewing smoke before grinding to a stop. The method of attack used in that demonstration could be replicated to destroy more and larger equipment, several experts say. Damage from such an attack would not be easy to repair quickly, because parts such as turbines are often huge, take a long time to build, and are made mostly overseas.

Prompt NRC Review: if a new plant licensing applicant provides 90 days or more advance written notification to NRC, the agency said it will schedule the staff's review to begin the next business day after the expected submittal date. For planning purposes, NRC also said in a January 10 regulatory issue summary (RIS 2008-01), that it will assume an application will arrive on the last day of the month if only the month, and not a date, is specified.

NRC: No Immediate Shutdowns Needed On Reactor Weld Issue: The Nuclear Regulatory Commission has decided not to require immediate shutdown of eight reactors to check for potentially faulty welds in key components, with officials saying resolution of the safety issue can wait until scheduled outages of the facilities over the next few weeks. NRC raised the prospect of immediate shutdown orders March 11, citing new analyses of faulty welds in a pressurizer taken from the St. Lucie nuclear plant, which is located at Fort Pierce and operated by Florida Power & Light Co.

While FP&L addressed the weld issue several years ago with the removal of the faulty pressurizer, NRC officials said the new analyses of the St. Lucie pressurizer by the Electric Power Research Institute (EPRI) showed more extensive cracking than previously believed.

Problems in Reporting of defects: some vendors who supply components to nuclear power plants are not properly reporting defects, NRC said in an information notice released January 4. In the notice, IN 2007-40, dated December 21, 2007, the staff described several instances it had identified during inspections at vendor facilities "where vendors failed to adequately implement the requirements" of the regulations. The staff said that several vendors' programs for 10 CFR Part 21 defective component reporting requirements "did not have adequate procedural guidance to identify and evaluate deviations associated with a substantial safety hazard." It said that the violations identified in the notice "are of particular concern because they often involved implementing procedures that were inadequate to reasonably assure the satisfaction" of the regulation's requirements. Information notices do not require a response, but licensees are expected to review them for applicability to their facilities. The notice is on NRC's Adams document system under accession number ML063380232.

Comments on Aircraft crash assessments: The new plant designs should have to demonstrate either that a plant's reactor core remains cool or the containment remains intact, not both, as is currently proposed in an NRC rule, the Nuclear Energy Institute recommended in comments submitted last month.

Multinational Design Program Commission approves reorganization of multinational design program The NRC commissioners last week approved the staff's recommended reforms of the Multinational Design Evaluation Program, or MDEP. This program, the staff said in a November 29, 2007 paper, Secy 07-207, is "a multinational initiative to develop innovative approaches to leverage the resources and knowledge of the national regulatory authorities who will be reviewing new reactor power plant designs." The staff paper described MDEP's original vision of three stages: Stage 1 involves a "multilateral cooperation within existing regulatory frameworks," Stage 2 focuses on "enhanced multinational cooperation and convergence of codes, standards, and safety goals," and Stage 3 involves "implementation of Stage 2 products to facilitate licensing processes for new reactors, including those being developed by the Generation IV International Forum." But the staff recommended, and the commissioners approved, a plan to consolidate the three stages into a single program.

Inattentive security guards are focus of NRC request

In the wake of revelations that some guards had been sleeping on duty at Peach Bottom, NRC has requested information on actions taken at power reactors and some fuel cycle facilities to "ensure security officer attentiveness." NRC concluded after two inspections this fall that 10 security guards at Exelon Nuclear's Peach Bottom plant had been caught sleeping or otherwise inattentive while on duty. The issue was raised by Kerry Beal, a former Wackenhut security guard at the plant, who covertly videotaped the guards in the plant's ready room, a place where on-duty officers can rest but must remain attentive (INRC, 10 Dec., 5). In its communication, Bulletin 2007-01, dated December 12, NRC requests "information associated with licensee security program administrative and management controls as a result of security personnel inattentiveness, and related concerns with the behavioral observation program." The agency said it needs the information "to determine if further regulatory action is warranted, if the necessary inspection program needs to be enhanced, or if additional assessment of security program implementation is needed."

Congress approves higher level than NRC's FY-08 budget request

Congress last week approved NRC's fiscal 2008 budget at \$926 million, giving the agency \$9 million more than its request last February. The level finalized December 19 by Congress includes a total of \$917.3 million for NRC-activities and \$8.7 million for the NRC Inspector General's Office. Most of NRC's budget – approximately 90% — must be offset from fees assess to its licensees. NRC must collect about \$779.1 million through inspection and licensing fees. The remainder, about \$147 million, will come from appropriations, including about \$29 million from the Nuclear Waste Fund.

NRC BULLETIN 2007-01: SECURITY OFFICER ATTENTIVENESS December 12, 2007

| File Name | Date | Description |
|----------------|-------------------|---|
| <u>gl20080</u> | <u>1</u> 01/11/08 | Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems |

Generic Letter Issued in 2008

(1) to request addressees to submit information to demonstrate that the subject systems are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance
(2) to collect the requested information to determine if additional regulatory action is Required

| File Name | Date | Description |
|-----------------|------|--|
| <u>gl200701</u> | | Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients. |

Information Notices Issued in 2007-08

| File Name | Date | Description |
|-----------------|----------|---|
| in200802 | 03/19/08 | Findings Identified During Component Design Bases Inspections |
| <u>in200801</u> | 01/03/08 | Designation and Protection Of Safeguards Information |
| <u>in200739</u> | 01/07/08 | Control of Simulation Software Categorized as Sensitive Unclassified Nonsafeguards Information |

| <u>in200740</u> | 12/21/07 | Inadequate Implementation of 10 CFR Part 21 Requirements by Vendors Who Supply Basic Components To Nuclear Power Plant Licensees |
|-----------------|----------|---|
| <u>in200738</u> | 12/14/07 | Ensuring Complete and Accurate Information in the Documentation of Training and Experience for Individuals Seeking Approval as Medical Authorized Users |
| <u>in200737</u> | 11/23/07 | Buildup of Deposits in Steam Generator |
| <u>in200736</u> | 11/15/07 | Emergency Diesel Generator Voltage Regulator Problems |
| <u>in200734</u> | 10/22/07 | Operating Experience Regarding Electrical Circuit Breakers |
| <u>in200732</u> | 10/15/07 | Out-of-service Equipment Connected To In-service Process Line Results in Fissile Solution Spill at Fuel Cycle Facility |
| | | |

2007-28: Potential Common Cause Vulnerabilities in Essential Service Water Systems Due to Inadequate Chemistry Controls

To inform the importance of maintaining essential service water (ESW) systems in a manner that precludes the development of potential common cause failure vulnerabilities due to inadequate water chemistry controls. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems.

2007-27: Recurring Events Involving Emergency Diesel Generator Operability

A staff evaluation of recent operating experience to identify recurring events involving the operability of emergency diesel generators (EDGs). The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems.

2007-18: Operating Experience Regarding Entrainment of Gas or Debris into Auxiliary Feedwater Systems

Several events have occurred at nuclear power facilities involving possible entrainment of gas or debris into AFW systems. Air or debris entrained in AFW systems can impact the capability of the AFW pumps to perform their specified safety functions.

2007-14: Loss of Offsite Power and Dual-unit Trip at Catawba Nuclear Generating Station

A loss-of-offsite-power (LOOP) and dual-unit trip event that occurred at the Catawba Nuclear Generating Station (Catawba) due to circuit

transformer (CT) failures and improper switchyard bus differential relay settings.

2007-09: Equipment Operability under Degraded Voltage Conditions

An event in which safety-related pump motors did not have adequate voltage at the starter circuit to ensure operability under degraded voltage conditions and a related deficiency involving a surveillance test procedure that specified an incorrect value for the emergency diesel generator (EDG) minimum acceptable voltage.

Regulatory Issue Summary

| | Document Number | Date | Title |
|---|--------------------|------|---|
| r | <u>RIS-08-01</u> | | Process for Scheduling Acceptance Reviews Based on Notification of Applicant Submission Dates for Early Site Permits, Combined Licenses, And Design Certifications and Process for Determining Budget Needs For Fiscal Year 2010 |

| Document Number | Date | Title |
|--------------------|----------|---|
| <u>RIS-07-29</u> | 12/27/07 | Clarified Guidance for Licensed Operator Watch-standing Proficiency |
| <u>RIS-07-25</u> | 12/18/07 | Combined License Application Acceptance Review Process |
| <u>RIS-07-24</u> | 09/27/07 | NRC Staff Position on Use of the Westinghouse Crossflow Ultrasonic Flow Meter for Power Uprate or Power Recovery |

Regulatory Guides Out For Comment

| Task Number | Title | Publish Date |
|----------------|---|-----------------|
| DG-1132 | Qualification of Safety-Related Cables and Field Splices for Nuclear Power Plants (ML071440445) | 06/2007 |
| DG-1138 | (Proposed Appendix C to Regulatory Guide 1.200) NRC Staff Regulatory Position on ANS External Hazards PRA Standard (ML042430314) | 09/2004 |
| DG-1148 | Qualification of Safety-Related Battery Chargers & Inverters for Nuclear Power Plants (ML071440292) | 07/2007 |
| DG-1173 | Guidance on Monitoring and Responding to Reactor Coolant System Leakage (Proposed Revision 1 of Regulatory Guide 1.45, dated May 1973) (<u>ML071070410</u>) | 06/2007 |

Status of Updating Software Related Regulatory Guides

1. Reg. Guide 1.169, "Configuration Management Plans for Digital Computer Software Used in Safety Systems in Nuclear Plants"

- Work initiated in December
- Background research complete
- Briefing package presenting findings and regulatory position issues to be available end of January
- Initial draft available February
- 2. Reg. Guide 1.170, "Software Test Documentation for Digital Computer Software Used in Safety Systems of Nuclear Power Plants"
 - Work initiated in December
 - Background research complete
 - Briefing package provided to NRC TM on comparison of the differences between 829-1998
 - <u>Key Issue Discussed with NRC TM</u>: Base updated RG on which version of IEEE 829, the soon to be completed 2008 version or on the 1998 version?

<u>Resolution:</u> Since the 2008 version is nearly complete (second balloting), proceed to develop the preliminary draft of this updated RG based upon the 2008 version and wait until 829-2008 has been approved before preparing the final draft of this RG.

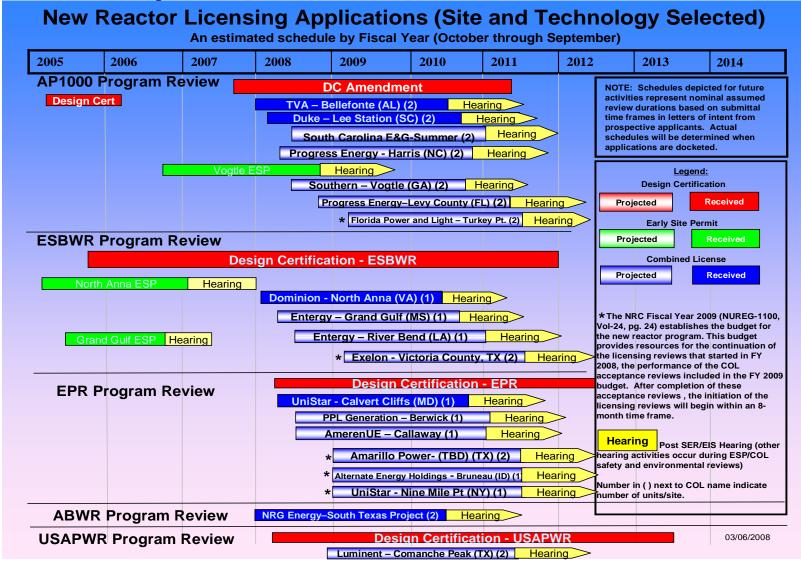
- 3. Reg. Guide 1.171, "Software Testing for Digital Computer Software Used in Safety Systems of Nuclear Power Plants"
 - Work initiated in December
 - Background research complete
 - Briefing package presenting findings and regulatory position issues to be available in early February for discussion with NRC TM
 - <u>Key Issue Discussed with NRC TM</u>: Proceed with preparation and discussion of Briefing Package and evaluate whether to proceed on updating this RG based upon any impacts from IEEE-829-2008, from new regulations, and/or IEEE-603 since IEEE 1008-1987 has not been updated.
- 4. Reg. Guide 1.172, "Software Requirements Specifications for Digital Computer Software Used in Safety Systems of Nuclear Power Plants"
 - Work to be initiated in February on updating this RG
 - Initial draft available in March
- 5. Reg. Guide 1.173, "Developing Software Life Cycle Processes for Digital Computer Software Used in Safety Systems of Nuclear Power Plants"
 - Work to be initiated in March on updating this RG
 - Initial draft should be available in April.

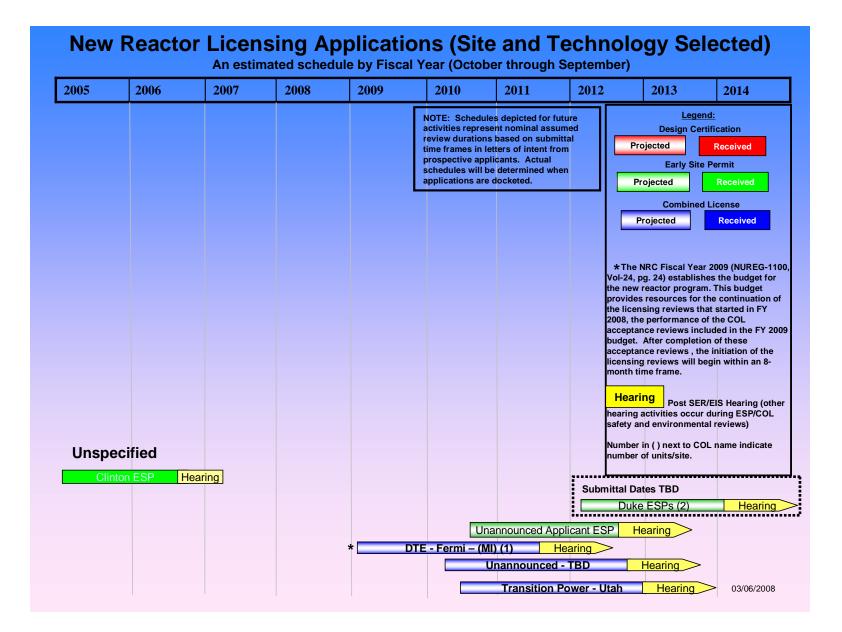
Interim Staff Guidance Status

- 1. TWG #1 Cyber Security
 - Issued December 31, 2007, ML072980159
- 2. TWG #2 Diversity and Defense-in-Depth
 - Issued September 26, 2007, ML072540118

- TWG #3 Review of New Reactor Digital Instrumentation and Control Probabilistic Risk Assessments
 - Issued November 29, 2007, ML073270006
- 4. TWG #4 Highly Integrated Control Rooms Communications Issues
 - Issued September 28, 2007, ML072540138
- 5. TWG #5 Highly Integrated Control Rooms Human Factors Issues
 - Issued September 28, 2007, ML072540140
- 6. TWG #6 Digital I&C Licensing Process
 - Issued October 15, 2007, ML072980287
- 7. TWG #7 Fuel Cycle Facilities
 - Ongoing work to develop ISG

New Reactor Licensing Activities





Expected New Nuclear Plant Applications

| Expected New Nuclear Power Plant Applications Updated March 28, 2008 | | | | | |
|---|--------|------------------|--|-------|-----------------------|
| Company * | Design | Date Accepted | Site Under Consideration | State | Existing Op. Plant |
| | С | alendar Yea | r (CY) 2007 Applications | | |
| Duke (52-018/019) | AP1000 | 2/25/08 | William Lee Nuclear Station (2 units) | SC | N |
| NuStart Energy (52-014/015) | AP1000 | 1/18/08 | Bellefonte (2 units) | AL | N |
| Dominion (52-017) | ESBWR | 1/29/08 | North Anna (1 unit) | VA | Y |
| NRG Energy (52-012/013) | ABWR | 11/29/07 | South Texas Project (2 units) | TX | Y |

2007 TOTAL NUMBER OF APPLICATIONS = 4

| | TOTAL NUMBER OF UNITS = 7 | | | | | | |
|---|--------------------------------------|---------|---------------------------|----|---|--|--|
| | Calendar Year (CY) 2008 Applications | | | | | | |
| Progress Energy (738) | AP1000 | | Harris (2 units) | NC | Y | | |
| Progress Energy (756) | AP1000 | | Levy County (2 units) | FL | Ν | | |
| South Carolina Electric & Gas (743) | AP1000 | | Summer (2 units) | SC | Y | | |
| Southern Nuclear Operating Co. (755) | AP1000 | | Vogtle (2 units) | GA | Y | | |
| Entergy (745) | ESBWR | | River Bend (1 unit) | LA | Y | | |
| NuStart Energy (744) | ESBWR | | Grand Gulf (1 unit) | MS | Y | | |
| Exelon (761) | ESBWR | | Victoria County (2 units) | ТХ | N | | |
| UNISTAR (52-016) | EPR | 1/25/08 | Calvert Cliffs (1 unit) | MD | Y | | |
| PPL Generation (763) | EPR | | Berwick (1 unit) | PA | Y | | |
| AmerenUE (750) | EPR | | Callaway (1 unit) | MO | Y | | |

| UNISTAR (759) | EPR | | Nine Mile Point (1 unit) | NY | Y |
|--|--------|-------------|--------------------------------|----|-----|
| Luminant Power (754) | USAPWR | | Comanche Peak (2 units) | ТХ | Y |
| Detroit Edison (757) | TBD | | Fermi (1 unit) | MI | Y |
| Amarillo Power (752) | EPR | | Vicinity of Amarillo (2 units) | ТХ | UNK |
| Alternate Energy Holdings (765) | EPR | | Bruneau (1 unit) | ID | N |
| 2008 TOTAL NUMBER OF APPLICATIONS = 15 TOTAL NUMBER OF UNITS = 22 | | | | | |
| | Ca | alendar Yea | r (CY) 2009 Applications | | |
| Florida Power and Light (763) | AP1000 | | Turkey Point (2 units) | FL | Y |
| 2009 TOTAL NUMBER OF APPLICATIONS = 2 TOTAL NUMBER OF UNITS = 3 | | | | | |

Following are the COL applications that have been received to date by the NRC as well as subsequent documentation:

| Site Name | Location |
|---------------------------------------|---|
| Bellefonte Nuclear Site Units 3 and 4 | TVA's Bellefonte site near Scottsboro in Jackson County, Alabama |
| Calvert Cliffs Unit 3 | Unistar's Calvert Cliffs site near Lusby in Calvert County, Maryland |
| Grand Gulf Unit 3 | EOI's Grand Gulf site, near Port Gibson in Claiborne County, Mississippi |
| North Anna Unit 3 | Dominion's North Anna sites near Richmond in Louisa County, Virginia |
| Shearon Harris Units 2 and 3 | PE's Harris sites near New Hill in Wake County, North Carolina |
| South Texas Project Units 3 and 4 | STPNOC's South Texas Project sites near Bay City in Matagorda County, Texas |
| William States Lee III Units 1 and 2 | Duke's Lee site near Charlotte in Cherokee County, South Carolina |

Issued Design Certifications

The staff has issued design certifications (DCs) for four reactor designs that can be referenced in an application for a nuclear power plant, which include:

- ABWR General Electric (GE) Nuclear Energy's Advanced Boiling Water Reactor design
- Westinghouse's System 80+ design
- Westinghouse's AP600 design
- Westinghouse's AP1000 design

Application Reviews Currently in Progress

The staff is currently reviewing the following DC applications:

• <u>Amended AP1000</u> - AP1000 Reactor by Westinghouse Electric Company

- <u>ESBWR</u> Economic Simplified Boiling Water Reactor by General Electric
- U.S. EPR U.S. Evolutionary Power Reactor by AREVA Nuclear Power
- US-APWR U.S. Advanced Pressurized Water Reactor by Mitsubishi Heavy Industries, Ltd.

Pre-Application Reviews

- ACR-700 Advanced CANDU Reactor by Atomic Energy of Canada Limited
- IRIS International Reactor Innovative and Secure by Westinghouse Electric Company
- <u>PBMR</u> Pebble Bed Modular Reactor

Issued Early Site Permits

- <u>Clinton ESP Site</u> Exelon Generation Company, LLC ESP
- Grand Gulf ESP Site System Energy Resources Inc. ESP
- <u>North Anna ESP Site</u> Dominion Nuclear North Anna, LLC ESP

Application Reviews Currently in Progress

- Vogtle ESP Site Southern Nuclear Operating Company Application received August 15, 2006
- License Renewal Activities

Completed Applications: 24

- Calvert Cliffs, Units 1 and 2
- Oconee Nuclear Station, Units 1, 2 and 3
- Arkansas Nuclear One, Unit 1

- Edwin I. Hatch Nuclear Plant, Units 1 and 2
- Turkey Point Nuclear Plant, Units 3 and 4
- North Anna, Units 1 and 2, and Surry, Units 1 and 2
- Peach Bottom, Units 2 and 3
- St. Lucie, Units 1 and 2
- Fort Calhoun Station, Unit 1
- McGuire, Units 1 and 2, and Catawba, Units 1 and 2
- H.B. Robinson Nuclear Plant, Unit 2
- R.E. Ginna Nuclear Power Plant, Unit 1
- V.C. Summer Nuclear Station, Unit 1
- Dresden, Units 2 and 3, and Quad Cities, Units 1 and 2
- Farley, Units 1 and 2
- Arkansas Nuclear One, Unit 2
- D.C. Cook, Units 1 and 2
- Millstone, Units 2 and 3
- Point Beach, Units 1 and 2
- Browns Ferry, Units 1, 2, and 3
- Brunswick, Units 1 and 2
- Nine Mile Point, Units 1 and 2
- Monticello
- Palisades

Applications Currently Under Review: 10

- Oyster Creek Application received July 22, 2005
- Pilgrim 1 Application received January 27, 2006
- Vermont Yankee Application received January 27, 2006
- James A. FitzPatrick Application received August 1, 2006
- Susquehanna Application received September 15, 2006
- Wolf Creek Application received October 4, 2006
- Harris Application received November 16, 2006
- Indian Point Application received April 30, 2007
- Vogtle Application received June 29, 2007

• Beaver Valley - Application received August 28, 2007

Future Submittals of Applications: 23 Letters of Intent received

Regulatory Guides

| Document Number | Description |
|-----------------------------------|--|
| <u>RG 1.97,</u> <u>Rev. 4</u> | Criteria For Accident Monitoring Instrumentation For Nuclear Power Plants, June 2006 |
| <u>RG 1.152,</u> <u>Rev. 2</u> | Criteria for Digital Computers in Safety Systems of Nuclear Power Plants, January 2006 |
| <u>RG 1.153,</u> <u>Rev. 1</u> | Criteria for Safety Systems, June 1996 |
| <u>RG 1.168,</u> <u>Rev. 1</u> | Verification, Validation, Reviews, and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," February 2004 |
| <u>RG 1.169</u> | Configuration Management Plans for Digital Computer Software Used in Safety Systems of Nuclear Power Plants, September 1997 |
| <u>RG 1.170</u> | Software Test Documentation for Digital Computer Software Used in Safety Systems of Nuclear Power Plants, September 1997 |
| <u>RG 1.171</u> | Software Unit Testing for Digital Computer Software Used in Safety Systems of Nuclear Power Plants, September 1997 |
| <u>RG 1.172</u> | Software Requirements Specifications for Digital Computer Software Used in Safety Systems of Nuclear Power Plants, September 1997 |
| <u>RG 1.173</u> | Developing Software Life Cycle Processes for Digital Computer Software Used in Safety Systems of Nuclear Power Plants, September 1997 |
| <u>RG 1.180,</u> <u>Rev. 1</u> | Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems, October 2003 |
| <u>RG 1.206</u> | Combined License Applications for Nuclear Power Plants (Draft Issued as DG-1145) |
| <u>RG 1.209</u> | Guidelines for Environmental Qualification of Safety-Related Computer-Based Instrumentation and Control |

| | Systems in Nuclear Power Plants, March 2007 |
|--|---|
|--|---|

Regulatory Guide Revision and Schedule (Phases 1,2,3,4)

http://www.nrc.gov/reading-rm/doc-collections/reg-guides/