



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

April 7, 2015

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-15-0029

TITLE: REPORT TO CONGRESS ON ABNORMAL  
OCCURRENCES: FISCAL YEAR 2014

The Commission (with all Commissioners agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of April 7, 2015.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

A handwritten signature in blue ink, appearing to read "Annette L. Vietti-Cook", written over a horizontal line.

Annette L. Vietti-Cook  
Secretary of the Commission

Enclosures:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Burns  
Commissioner Svinicki  
Commissioner Ostendorff  
Commissioner Baran  
OGC  
EDO  
PDR

**SECY NOTE**

This Voting Record will be released to the public five working days after dispatch of the report to Congress.

VOTING SUMMARY - SECY-15-0029

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. BURNS	X				X	3/23/15
COMR. SVINICKI	X				X	3/31/15
COMR. OSTENDORFF	X				X	3/9/15
COMR. BARAN	X				X	3/27/15

**NOTATION VOTE**

**RESPONSE SHEET**

TO: Annette Vietti-Cook, Secretary  
FROM: Chairman Burns  
SUBJECT: SECY-15-0029: REPORT TO CONGRESS ON  
ABNORMAL OCCURRENCES: FISCAL YEAR 2014

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below XX Attached \_\_\_ None \_\_\_

I approve the draft Fiscal Year 2014 Report to Congress on Abnormal Occurrences.



\_\_\_\_\_

SIGNATURE

23 March 2015

DATE

Entered on "STARS" Yes  No \_\_\_\_\_

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER SVINICKI  
SUBJECT: SECY-15-0029: REPORT TO CONGRESS ON  
ABNORMAL OCCURRENCES: FISCAL YEAR 2014

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below XX Attached XX None \_\_\_\_\_

I approve the draft Fiscal Year 2014 Report to Congress on Abnormal Occurrences,  
subject to the attached edits.

  
\_\_\_\_\_  
SIGNATURE

03/31/15  
\_\_\_\_\_  
DATE

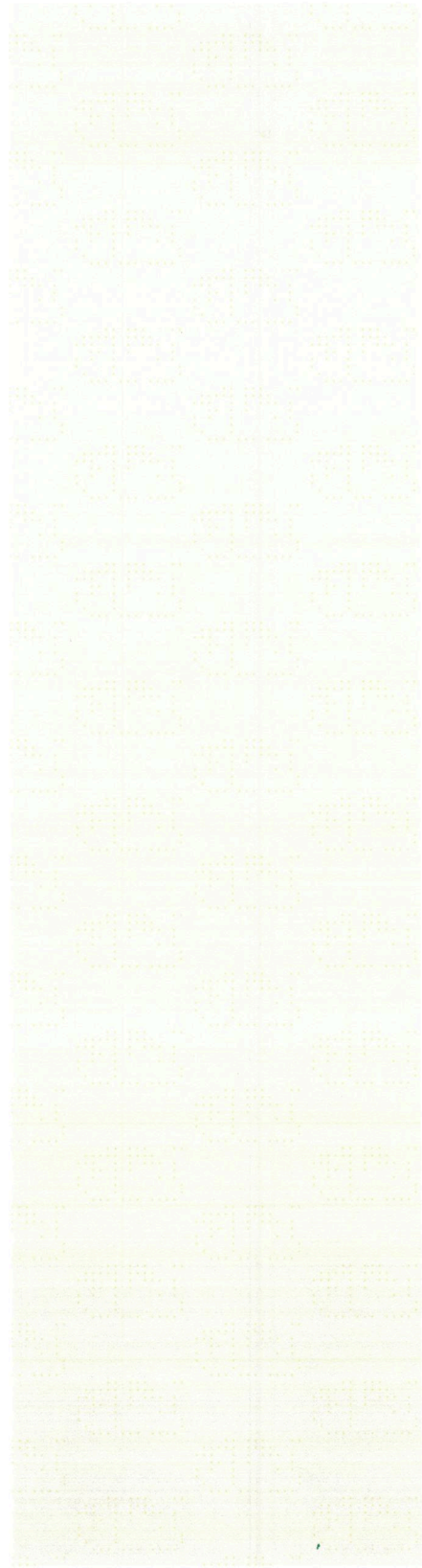
Entered on "STARS" Yes  No \_\_\_\_\_

**DRAFT**

**Report to Congress on Abnormal  
Occurrences**

Fiscal Year 2014

United States Nuclear Regulatory Commission  
Washington, DC 20555-0001



## ABSTRACT

Section 208 of the Energy Reorganization Act of 1974, as amended (Public Law 93-438), defines an “abnormal occurrence” (AO) as an unscheduled incident or event that the U.S. Nuclear Regulatory Commission (NRC) determines to be significant from the standpoint of public health or safety. The Federal Reports Elimination and Sunset Act of 1995 (Public Law 104-66) requires that the NRC report AOs to Congress annually.

This report describes one event involving an NRC licensee that the NRC identified as an AO during fiscal year (FY) 2014 based on the criteria defined in Appendix A, “Abnormal Occurrence Criteria and Guidelines for Other Events of Interest.” This event occurred at an NRC-licensed medical institution and is a medical event, as defined in Part 35 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Medical Use of Byproduct Material.”

In addition, this report describes twelve events that Agreement States identified as AOs during FY 2014 based on the criteria defined in this report’s Appendix A. Agreement States are those States that have entered into formal agreements with the NRC, pursuant to Section 274 of the Atomic Energy Act of 1954 (AEA) (Public Law 83-703), to regulate certain quantities of AEA material at facilities located within their borders. Currently, there are 37 Agreement States. One event involved radiation exposure to an embryo/fetus and the other eleven events were medical events, as defined in 10 CFR Part 35. It should be noted that the number of identified AOs is small in comparison to the [high number](#) millions of medical procedures performed annually.

Appendix A to this report presents the NRC’s criteria for determining AOs, as well as the guidelines for selecting “other events of interest.” Appendix B, “Updates of Previously Reported Abnormal Occurrences,” provides updated information for two events previously updated in past years’ “Report to Congress on Abnormal Occurrences.” The update includes a medical event at Lovelace Medical Clinic in Albuquerque, New Mexico and a commercial nuclear power plant event at Browns Ferry Nuclear Plant, Unit 1, in Athens, Alabama. During FY 2014, the NRC identified no events that met the guidelines for inclusion in Appendix C, “Other Events of Interest,” either as an update to previously reported information or as a new event that received significant public interest. Appendix D, “Glossary,” presents definitions of terms used throughout this report. Appendix E, “Conversion Table,” presents conversions commonly used when calculating doses.

The NRC adheres to the philosophy that the health and safety of the public are best ensured by establishing multiple levels of protection. The agency achieves and maintains these levels through regulations specifying requirements that ensure the safe use of radioactive materials. Those regulations contain design, operation, and quality assurance criteria appropriate for the various activities regulated by the NRC. Licensing, inspection, investigations, and enforcement programs provide a regulatory framework to ensure compliance with the regulations. In addition, the NRC is making the regulatory system more risk-informed and performance-based, where appropriate.

## REPORTABLE EVENTS

The NRC initially issued the AO criteria in a Commission policy statement published in the *Federal Register* on February 24, 1977 (42 FR 10950), followed by several revisions in subsequent years. The most recent revision to the AO criteria was published in the *Federal Register* on October 12, 2006 (71 FR 60198), and became effective on that date. That revision established the criteria presented in Appendix A of this report, which the NRC used to define AOs for the report.

Review of, and responses to, operating experience are essential to ensure that licensees conduct their activities safely. Toward that end, the regulations require that licensees report certain incidents or events to the NRC. Such reporting helps to identify deficiencies and ensure that corrective actions are taken to prevent recurrence.

The NRC and its licensees review and evaluate operating experience to identify safety concerns. The NRC responds to risk-significant issues through licensing reviews, inspections, and enhancements to regulations. In addition, the agency maintains operational data in computer-based data files for more effective collection, storage, retrieval, and evaluation.

The NRC routinely makes information and records on reportable events at licensed facilities available to the public. The agency also disseminates information through public announcements and special notifications to licensees and other stakeholders. The NRC issues a *Federal Register* notice describing AOs that occurred in the previous FY at facilities licensed or otherwise regulated by the NRC or Agreement States. In addition, the NRC routinely informs Congress of significant events, including AOs that occur at licensed or regulated facilities.

## AGREEMENT STATES

Section 274 of the AEA authorizes the Commission to enter into agreements with States whereby the Commission relinquishes and the States assume certain regulatory authority over byproduct, source, and certain quantities of special nuclear materials. States that enter into such agreements with the NRC are known as Agreement States. Agreement States must maintain programs that are adequate to protect public health and safety and are compatible with the Commission's program for such materials. At the end of FY 2014, there were 37 Agreement States.

Agreement States report event information to the NRC in accordance with compatibility criteria established by the "Policy Statement on Adequacy and Compatibility of Agreement State Programs," which the agency published in the *Federal Register* on September 2, 1997 (62 FR 46517). The NRC also has implemented procedures for evaluating materials events to

## ABNORMAL OCCURRENCES IN FISCAL YEAR 2014

Appendix A provides the specific criteria for determining whether an event is an abnormal occurrence (AO) and provides the guidelines for reporting other events of interest that may not meet the AO criteria, but which the Commission has determined should be in this report. Appendix A contains four major categories: I. All Licensees, II. Commercial Nuclear Power Plant Licensees, III. Events at Facilities Other Than Nuclear Power Plants and All Transportation Events, and IV. Other Events of Interest. Categories I, II, and III are discussed in this section and Category IV events are discussed in Appendix C to this report.

### I. ALL LICENSEES

During this reporting period, one event involving an Agreement State licensee was significant enough to be reported as an AO based on criteria in Appendix A, Criterion I, to this report. Although the event occurred at a medical facility, it involved unintended exposure of an individual who was not the patient. Therefore, this event belongs under the Criterion I.A, "All Licensees," category, as opposed to the Criterion III.C, "Medical Licensees," category.

#### AS14-01 Human Exposure to Radiation Event at Adventist Health Systems in Altamonte Springs, Florida

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Criterion I.A.2, "Human Exposure to Radiation from Licensed Material," of Appendix A to this report provides that any unintended radiation exposure to any minor (an individual less than 18 years of age) resulting in an annual total effective dose equivalent of 50 millisieverts (mSv) [5 roentgen equivalent man (rem)] or more, or to an embryo/fetus resulting in a dose equivalent of 50 mSv (5 rem) or more, shall be considered for reporting as an AO.

Date and Place—June 26, 2014, Altamonte Springs, Florida

Nature and Probable Consequences—Adventist Health Systems (the licensee) reported that a pregnant patient received 3.7 gigabecquerels (GBq) [100 millicuries (mCi)] of iodine-131 for thyroid ablation therapy. On June 25, 2014, the patient tested negative for pregnancy. Subsequent to the procedure, her physician requested a re-test, which confirmed that she was pregnant. The estimated date of conception was June 23, 2014. The licensee calculated an estimated dose of 250 mSv (25 rem) to the fetus from the procedure.

The patient and referring physician were informed of this event. The dose was received during the first week of pregnancy, before the formation of any internal organs in the fetus. The administered iodine-131 was out of the patient's body before critical development of the fetus occurred; therefore, this exposure should not cause any developmental effects. The only effect noted in the licensee's report was the possibility the fetus might not have been viable, however, the patient was still pregnant as of August 3, 2014, and the licensee believes that the effect of the exposure to the fetus was minimal.

Cause(s)—The patient became pregnant immediately (a few days) prior to the procedure and the pregnancy was not detected via a standard HCG (human chorionic gonadotropin) pregnancy test until July 7, 2014.



## II. COMMERCIAL NUCLEAR POWER PLANT LICENSEES

During this reporting period, no events at commercial nuclear power plants in the United States were significant enough to be reported as AOs based on the criteria in Appendix A to this report.

## III. EVENTS AT FACILITIES OTHER THAN NUCLEAR POWER PLANTS AND ALL TRANSPORTATION EVENTS

During this reporting period, one event at an NRC licensee and 12 events involving Agreement State licensees were significant enough to be reported as AOs, based on Criterion III in Appendix A to this report.

### AS14-02 Medical Event at an Unspecified Licensee in New York State

Criteria III.C.1.b and III.C.2.b(iii), "For Medical Licensees," of Appendix A to this report provide, in part, that a medical event shall be considered for reporting as an AO if it results in a dose equal to or greater than 10 Gy (1,000 rad) to any organ or tissue (other than a major portion of the bone marrow, the lens of the eye, or the gonads) and represents a prescribed dose or dosage that is delivered to the wrong treatment site.

Date and Place—December 17, 2007 (reported on March 13, 2009), Unspecified City, New York

Nature and Probable Consequences—The unspecified licensee reported a medical event to the New York State Department of Health (DOH). The DOH reported the event to the NRC but has only recently provided the NRC with required information for this report. The DOH did not specify the name of the licensee for this medical event in an effort to comply in compliance with New York state law designed to protect the privacy of the patient. This event occurred during a brachytherapy seed implant treatment for prostate cancer. The patient was prescribed to receive a total dose of 144 Gy (14,400 rad) to the prostate using 50 seeds of iodine-125. However, it was determined during post implant seed count that many of the seeds were implanted in the rectum and urethra (wrong treatment site). The calculated dose to the wrong treatment site is 144 Gy (14,400 rad), assuming the same volume of tissue was treated as was expected to be treated during treatment planning.

Ultrasound and fluoroscopy systems were used to aid with positioning the seeds; however, the radiation oncologist misidentified the prostate, resulting in the incorrect placement of many of the 50 seeds. On April 16, 2008, the Radiation Safety Officer performed a review of the patient's chart, including all films and images taken, and identified that many seeds had not been properly placed. It was determined that the tumor was under-dosed but additional radiation treatment of the prostate was not recommended. The patient and referring physician were informed of this event. The licensee concluded that the medical event would not have a significant adverse effect on the patient.

Cause(s)—The cause of the medical event was human error in that the medical staff did not follow the licensee's policies to properly image the patient's prostate.

**NRC14-01 Medical Event at Camden-Clark Memorial Hospital in Parkersburg, West Virginia**

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Criterion III.C.1.b and III.C.2.b(iii), "For Medical Licensees," of Appendix A to this report provide, in part, that a medical event shall be considered for reporting as an AO if it results in a dose equal to or greater than 10 gray (Gy) [1,000 rad] to any organ or tissue (other than a major portion of the bone marrow, the lens of the eye, or the gonads) and represents a prescribed dose or dosage that is delivered to the wrong treatment site.

Date and Place—February 25, 2011 (reported on March 5, 2012), Parkersburg, West Virginia

Nature and Probable Consequences—Camden-Clark Memorial Hospital (the licensee), per the request of NRC Region I, performed a reassessment of the records associated with a prostate radioactive seed implantation procedure performed on February 25, 2011. The record review indicated that the patient treated with permanent implant palladium-103 seeds received roughly 53 percent of the prescribed dose. Additionally, the record review indicated that 50 percent of the tissue located adjacent to the prostate volume being treated (wrong treatment site) received a dose between 275 Gy (27,500 rad) and 375 Gy (37,500 rad). The attending physician did not notify the patient because he felt it would be of no benefit to the patient.

The licensee concluded that the medical event would not have a significant adverse effect on the patient.

Cause(s)—The cause of the medical event was that the licensee failed to develop and implement effective procedures to ensure that treatments were performed in accordance with written directives.

Actions Taken To Prevent Recurrence

Licensee—The licensee's corrective actions included developing a detailed procedure specific to the prostate brachytherapy program and providing additional training to personnel involved in the program.

NRC—An NRC inspection was conducted from January 18, 2012 through April 22, 2013, which identified several programmatic weaknesses associated with the prostate brachytherapy program. On August 8, 2013, the NRC issued a notice of violation (NOV) to the licensee for failure to implement procedures to provide high confidence that each administration was performed in accordance with the written directive.

This event is closed for the purpose of this report.

#### **AS14-11 Medical Event at Unspecified Licensee in Unspecified City, Texas**

Criteria III.C.1.b and III.C.2.b(iii), "For Medical Licensees," of Appendix A to this report provide, in part, that a medical event shall be considered for reporting as an AO if it results in a dose equal to or greater than 10 Gy (1,000 rad) to any organ or tissue (other than a major portion of the bone marrow, the lens of the eye, or the gonads) and represents a prescribed dose or dosage that is delivered to the wrong treatment site.

Date and Place—June 5, 2014, Unspecified City, Texas

Nature and Probable Consequences—The unspecified licensee reported a medical event to the Texas Department of State Health Services (DSHS). The DSHS reported the event and provided the NRC with the required information for the report. The DSHS has redacted the name of the licensee in an effort to comply with Texas state law designed to protect the privacy of the patient. This event occurred during a brachytherapy procedure for prostate cancer treatment. The patient was prescribed to receive a total dose of 14,400 cGy (rad) to the prostate using 58 iodine-125 (I-125) seeds. Instead, the seeds were implanted 3.5 centimeters inferior (below) to the target volume, resulting in 14,400 cGy to a small volume of the rectum and other normal tissue below the target volume (wrong treatment site). The patient and referring physicians were informed of the event.

During the treatment, the I-125 seeds were manually being implanted with ultrasound guidance. After the implantation began, the imaging deteriorated and it was difficult to determine the boundary between the prostate and bladder. After discussion, the radiologist and urologist decided to continue with the procedure as they thought they had identified the bladder base. After the procedure was completed, it was discovered that the Foley bulb used to visualize the bladder had been pierced and deflated. During the post-plan evaluation using a post-implant computed tomography (CT) acquired on August 7, 2014, it was discovered that the seeds were positioned 3.5 centimeters inferior to the target volume. Rectal and bladder doses were not significantly impacted by the seed misplacements and remained within typical doses for prostate impacts. The patient is receiving external beam radiation therapy to boost areas of the prostate that did not receive the prescribed dose. The licensee concluded that there were no acute medical effects to the patient and no long-term significant complications are expected.

Cause(s)—The application needle used to manually implant the seeds is believed to have punctured the Foley bulb, resulting in reduced visibility of the bladder and misplacement of the seeds. Additionally, the radiation oncologist had not performed a prostate seed implant in 5 years and was not an authorized user on the license.

#### Actions Taken To Prevent Recurrence

Licensee—The licensee has revised its procedures to ensure that physicians are authorized users on its license before radioactive material therapy use. Additionally, the licensee has instituted the practice that if at any time during the procedure adequate visualization is compromised, the procedure will be interrupted until visualization is reestablished. The radiation oncologist who performed this procedure has decided to discontinue performing the prostate seed implant procedure.

State—The State cited the licensee for failure to report a medical event within the required time and for the performing physician not being on the license as an authorized user.

3. Any radiation exposure that has resulted in unintended permanent functional damage to an organ or a physiological system as determined by a physician.
- B. Discharge or dispersal of radioactive material from its intended place of confinement ~~which that~~ results in the release of radioactive material to an unrestricted area in concentrations which, if averaged over a period of 24 hours, exceeds 5,000 times the values specified in Table 2 of Appendix B, "Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sewerage," to Part 20 of Title 10 of the *Code of Federal Regulations* (10 CFR), "Standards for Protection against Radiation," unless the licensee has demonstrated compliance with 10 CFR 20.1301, "Dose Limits for Individual Members of the Public," using 10 CFR 20.1302(b)(1) or 10 CFR 20.1302(b)(2)(ii).
- This criterion does not apply to transportation events.
- C. Theft, Diversion, or Loss of Licensed Material, or Sabotage or Security Breach<sup>1,2</sup>
1. Any unrecovered lost, stolen, or abandoned sources that exceed the values listed in Appendix P to 10 CFR Part 110, "Category 1 and 2 Radioactive Material." Excluded from reporting under this criterion are those events involving sources that are lost, stolen, or abandoned under the following conditions: sources abandoned in accordance with the requirements of 10 CFR 39.77(c); sealed sources contained in labeled, rugged source housings; recovered sources with sufficient indication that doses in excess of the reporting thresholds specified in AO criteria I.A.1 and I.A.2 did not occur while the source was missing; and unrecoverable sources (sources that have been lost and for which a reasonable attempt at recovery has been made without success) lost under such conditions that doses in excess of the reporting thresholds specified in AO criteria I.A.1 and I.A.2 are not known to have occurred and the agency has determined that the risk of theft or diversion is acceptably low.

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<sup>1</sup> Information pertaining to certain incidents may be either classified or under consideration for classification because of national security implications. Classified information will be withheld when formally reporting these incidents in accordance with Section 208 of the Energy Reorganization Act of 1974, as amended. Any classified details regarding these incidents would be available to the Congress, upon request, under appropriate security arrangements.

<sup>2</sup> Due to increased terrorist activities worldwide, this report does not disclose specific classified information and sensitive information, the details of which are considered useful to a potential terrorist. Classified information is defined as information that would harm national security if disclosed in an unauthorized manner.

2. A substantiated<sup>3</sup> case of actual theft or diversion of licensed, risk-significant radioactive sources or a formula quantity<sup>4</sup> of special nuclear material; or act that results in radiological sabotage.<sup>5</sup>
3. Any substantiated<sup>3</sup> loss of a formula quantity<sup>4</sup> of special nuclear material or a substantiated<sup>3</sup> inventory discrepancy of a formula quantity<sup>4</sup> of special nuclear material that is judged to be caused by theft or diversion or by a substantial breakdown<sup>6</sup> of the accountability system.
4. Any substantial breakdown<sup>6</sup> of physical security or material control (i.e., access control containment or accountability systems) that significantly weakened the protection against theft, diversion, or sabotage.
5. Any significant unauthorized disclosures (loss, theft, and/or deliberate) of classified information that harms national security or safeguards information that harms the public health and safety.

D. Initiation of High-Level NRC Team Inspection.<sup>7</sup>

## II. For Commercial Nuclear Power Plant Licensees

### A. Malfunction of Facility, Structures, or Equipment

1. Exceeding a safety limit of license technical specification (TS) [10 CFR 50.36(c)].
2. Serious degradation of fuel integrity, primary coolant pressure boundary, or primary containment boundary.
3. Loss of plant capability to perform essential safety functions so that a release of radioactive materials, which could result in exceeding the dose limits of 10 CFR Part 100, "Reactor Site Criteria," or 5 times the dose limits of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix A, "General Design Criterion for Nuclear Power Plants," General Design Criterion (GDC) 19, "Control Room," could

<sup>3</sup> "Substantiated" means a situation where an indication of loss, theft, or unlawful diversion such as: an allegation of diversion, report of lost or stolen material, statistical processing difference, or other indication of loss of material control or accountability cannot be refuted following an investigation; and requires further action on the part of the agency or other proper authorities.

<sup>4</sup> A formula quantity of special nuclear material is defined in 10 CFR 70.4, "Definitions."

<sup>5</sup> Radiological sabotage is defined in 10 CFR 73.2, "Definitions."

<sup>6</sup> A substantial breakdown is defined as a red finding in the security inspection program, or any plant or facility determined to have overall unacceptable performance, or in a shutdown condition (inimical to the effective functioning of the nation's critical infrastructure) as a result of significant performance problems and/or operational events.

<sup>7</sup> Initiation of any Incident Investigation Teams, as described in NRC Management Directive (MD) 8.3, "NRC Incident Investigation Program," or initiation of any accident review groups, as described in MD 8.9, "Accident Investigation."

occur from a postulated transient or accident (e.g., loss of emergency core cooling system, loss of control rod system).

B. Design or Safety Analysis Deficiency, Personnel Error, or Procedural or Administrative Inadequacy

1. Discovery of a major condition not specifically considered in the safety analysis report (SAR) or TS that requires immediate remedial action.
2. Personnel error or procedural deficiencies that result in loss of plant capability to perform essential safety functions so that a release of radioactive materials, which could result in exceeding the dose limits of 10 CFR Part 100 or 5 times the dose limits of 10 CFR Part 50, Appendix A, GDC 19, could occur from a postulated transient or accident (e.g., loss of emergency core cooling system, loss of control rod drive mechanism).

C. Any reactor events or conditions that are determined to be of high safety significance.<sup>8</sup>

D. Any operating reactor plants that are determined to have overall unacceptable performance or that are in a shutdown condition as a result of significant performance problems and/or operational event(s).<sup>9</sup>

III. Events at Facilities Other Than Nuclear Power Plants and All Transportation Events

A. Events Involving Design, Analysis, Construction, Testing, Operation, Transport, Use, or Disposal of Licensed Facilities or Regulated Materials

1. An accidental criticality [10 CFR 70.52(a)].
2. A major deficiency in design, construction, control, or operation having significant safety implications that require immediate remedial action.
3. A serious safety-significant deficiency in management or procedural controls.

<sup>8</sup> The NRC reactor oversight process (ROP) uses four colors to describe the safety significance of licensee performance. As defined in NRC Management Directive 8.13, "Reactor Oversight Process," green is used for very low safety significance, white is used for low to moderate safety significance, yellow is used for substantial safety significance, and red is used for high safety significance. Reactor conditions or performance indicators evaluated to be red are considered abnormal occurrences. Additionally, Criterion II.C also includes any events or conditions evaluated by the NRC ASP program to have a conditional core damage probability (CCDP) or change in core damage probability ( $\Delta$ CDP) of greater than  $1 \times 10^{-3}$ .

<sup>9</sup> Any plants assessed by the ROP to be in the unacceptable performance column, as described in NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program." This assessment of safety performance is based on the number and significance of NRC inspection findings and licensee performance indicators.

**Commercial Nuclear Power Plant Event at Browns Ferry Nuclear Plant, Unit 1, in Athens, Alabama** (previously reported as NRC11-02 in NUREG-0090, Volume 34, with updates in Appendix B of NUREG-0090, Volume 35)

Date and Place—October 23, 2010, Athens, Alabama

Background—The Tennessee Valley Authority (TVA) (the licensee) reported a commercial nuclear power plant event at Browns Ferry Nuclear Plant, Unit 1, a boiling-water reactor designed by General Electric. During a refueling outage, it was discovered that a residual heat removal (RHR) low pressure coolant injection (LPCI) flow control valve failed while the licensee was attempting to establish shutdown cooling. The NRC reviewed this event under its significance determination process and determined that the licensee's history with regards to this valve performance issue represented a finding of high safety significance (Red finding). The NRC determined that this event did not represent an immediate safety concern, because the licensee staff had, as part of its immediate corrective actions, implemented repairs and modifications that returned the flow control valve to an operational condition.

Update on Actions Taken To Prevent Recurrence

NRC—NRC staff initiated a supplemental inspection per Inspection Procedure 95003 (ADAMS Accession No. ML102020551), which was implemented in three parts beginning on September 12, 2011. The three parts of the inspection were completed and documented in inspection reports (Part 1 documented November 17, 2011 (ADAMS Accession No. ML113210602); Part 2 documented February 28, 2012 (ADAMS Accession No. ML12059A314); and Part 3 documented August 22, 2013 (ADAMS Accession No. ML13234A539)). The NRC used the results of these inspections to determine the breadth and depth of safety, organizational, and programmatic issues at Browns Ferry Nuclear Power Plant and to assess the adequacy of their Integrated Improvement Plan (IIP) submitted to the NRC on August 23, 2012 (available at ADAMS Accession No. ML12240A106). The NRC reviewed the TVA committed IIP actions and issued a Confirmatory Action Letter (CAL) (ADAMS Accession No. ML13232A105) on August 22, 2013. This letter confirmed TVA's actions, which when completed by TVA and verified to be adequate by the NRC, would reasonably serve to inform the NRC's decision regarding closure of the Red finding and the transition of Browns Ferry Nuclear Plant Unit 1 out of the Multiple/Repetitive Degraded Cornerstone Column (Column 4) consistent with the NRC's Reactor Oversight Process. The NRC verified and documented, in an inspection report issued January 27, 2014 (ADAMS Accession No. ML14027A742), the conclusion that TVA had taken sufficient actions to support closure of the Red finding. Browns Ferry Nuclear Plant, Unit 1, was moved to the Licensee Response Column (Column 1) of the NRC Action Matrix on October 1, 2014 (ADAMS Accession No. ML14289A458).

This event is closed for the purpose of this report.

**NOTATION VOTE**

**RESPONSE SHEET**

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER OSTENDORFF  
SUBJECT: SECY-15-0029: REPORT TO CONGRESS ON  
ABNORMAL OCCURRENCES: FISCAL YEAR 2014

Approved  X  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below  X  Attached \_\_\_ None \_\_\_

I approve the draft Fiscal Year 2014 Report to Congress on Abnormal Occurrences (AO). Prior to the next report to Congress, the staff should identify an estimate of the number of byproduct medical procedures, both tests and treatments, performed in the United States to put into context the number of AOs reported in future reports to Congress on AOs.

  
\_\_\_\_\_  
SIGNATURE

3/9/15  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes \_\_\_ No \_\_\_



**NOTATION VOTE**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary  
**FROM:** Commissioner Baran  
**SUBJECT:** SECY-15-0029: REPORT TO CONGRESS ON  
ABNORMAL OCCURRENCES: FISCAL YEAR 2014

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

**COMMENTS:** Below XX Attached \_\_\_\_\_ None \_\_\_\_\_

I approve the draft Fiscal Year 2014 Report to Congress on Abnormal Occurrences. I am concerned that two states withheld from NRC the licensee names and locations associated with reported abnormal occurrences. Staff should continue to work with the Agreement States to improve the timeliness, consistency, and completeness of the information that is reported.

  
\_\_\_\_\_  
**SIGNATURE**

3/27/15  
\_\_\_\_\_  
**DATE**

Entered on "STARS" Yes X No \_\_\_\_\_