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# 2010 Reactor Actions

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Carolina Power and Light Company (Brunswick Steam Electric Plant) EA-10-192

On December 21, 2010, the NRC issued a violation of 10 CFR 50.54(q) associated with a White Significance Determination Process finding involving the failure to follow and maintain in effect Emergency Plans which required activation of the Operations Support Center (OSC), Technical Support Center (TSC), and Emergency Operations Facility (EOF) within 60 to 75 minutes following the declaration of an Alert or higher emergency classification. Specifically, on June 6, 2010, the licensee failed to activate the OSC, TSC, and EOF until approximately two and one-half hours after an Alert was declared.

PPL Susquehanna, LLC (Susquehanna Steam Electric Plant) EA-10-207

On December 16, 2010, the NRC issued a White finding to PPL Susquehanna, LLC as a result of inspections at the Susquehanna Steam Electric Plant Unit 1 and 2. The White finding involved inadequate procedures related to the maintenance and operation of the main condenser waterboxes and circulating water system, which resulted in an internal flooding event, a manual scram, and a loss of the normal reactor heat sink. There were no NRC violations associated with the finding.

Carolina Power and Light Company (H. B. Robinson Steam Electric Plant) EA-10-205

On December 7, 2010, the NRC issued a White finding with associated violation and Notice of Violation (NOV) for a Severity Level III violation to Carolina Power and Light Company (doing business as Progress Energy Carolinas Inc (PEC)) as a result of inspections at the H.B. Robinson Steam Electric Plant Unit 2. The White finding involved the failure to identify and correct a problem associated with the “B” Emergency Diesel Generator (EDG) output breaker in 2008. Again in 2009, a similar malfunction caused the EDG to be declared inoperable for a period greater than Technical Specifications. A 10 CFR 50.9, “Completeness and Accuracy of Information,” NOV for a Severity Level III violation was also assessed for submitting materially inaccurate information. PEC provided information which stated that the breaker was tested in accordance with a maintenance procedure. However, the NRC determined that they had not conducted full testing in accordance with the procedure, and only completed the instructions for returning the breaker to service.

Kansas State University (Research Reactor Facility) EA-10-234

On November 22, 2010, the NRC issued a Notice of Violation to Kansas State University for a severity level III violation involving 10 CFR 20.1101(a). Specifically, on or prior to September 22, 2010, the licensee did not implement a radiation protection program commensurate with the scope and extent of licensed activities that was sufficient to ensure compliance with the provisions of the regulations in Part 20. Examples include: (1) On or prior to September 22, 2010, the licensee did not make surveys as required by 10 CFR 20.1501 when the licensee failed to determine the magnitude and extent of radiation levels that would be caused by irradiating oil samples on September 21, 2010 that subsequently resulted, on September 22, 2010, in an unexpected high shallow-dose equivalent of 12.5 rem to the skin of the extremities (hands) of the operator handling the experiment and an unexpected change in the restricted area dose rates that exceeded 50 rem per hour on September 22, 2010; (2) On September 22, 2010, the licensee failed to supply and require the use of extremity monitoring devices to personnel who were likely to receive in 1 year, from sources external to the body, a dose in excess of 10 percent of the limits in 20.1201(a) in that, a person handling oil samples and a sample holder, which read in excess of 50 rem per hour, was not wearing, and had not been issued, extremity

monitoring; (3) On or prior to September 22, 2010, the licensee did not have an adequate procedure as required by Technical Specification Section 6.3 to assure the safety of personnel within the Laboratory for conducting sample irradiations, in that, Experiment Procedure 1, "Isotope Production," did not require extremity dosimetry – finger rings – for those handling samples, it did not have a maximum sample withdrawal rate, and it did not specify threshold exposure/dose rates (hold points) to clearly indicate at what dose rate a sample should not be withdrawn from the pool.

### Omaha Public Power District (Fort Calhoun Station) EA-10-084

On October 6, 2010, the NRC issued a Notice of Violation to Omaha Public Power District for a violation of Technical Specification 5.8.1.a, "Procedures," at Fort Calhoun Station. This violation, which is associated with a Yellow Significance Determination Process finding, involved the licensee's failure to develop an adequate procedure for protecting vital facilities and equipment from external flooding events to the level described in the Updated Final Safety Analysis Report. Specifically, the inspectors identified that the licensee's strategy of using sandbags stacked on top of floodgates would not be effective in protecting the auxiliary building, intake structure, and turbine building basement because the tops of the floodgates were too small to support the necessary number of sandbags. This could have resulted in flooding impacting multiple, redundant trains of equipment required for safe shutdown of the plant.

### Duke Energy Carolinas, LLC (Oconee Nuclear Station) EA-10-094

On August 12, 2010, the NRC issued a Yellow and a White finding with associated violations and a Notice of Violation (NOV) for a Severity Level III violation to Duke Energy Carolinas, LLC. (Duke) as a result of inspections at the Oconee Nuclear Station Units 1, 2 and 3. The Yellow finding involved the failure to ensure the Standby Shutdown Facility (SSF) Reactor Coolant Makeup (RCM) subsystem for all three units remained operable as required by Technical Specifications. The White finding involved the failure to identify and correct Unit 2 and Unit 3 SSF RCM letdown line degradation in a timely manner after degradation was identified on Unit 1, as required by 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." A 10 CFR 50.9, "Completeness and Accuracy of Information," NOV for a Severity Level III violation was also assessed to Duke for submitting materially inaccurate information. Duke provided information which described an alternate flow path that could be used to control pressurizer level during an SSF event. However, it was discovered that this flow path was not available due to a closed manual valve inside containment.

### Calvert Cliffs Nuclear Power Plant, LLC (Calvert Cliffs Nuclear Power Plant) EA-10-080

On August 3, 2010, the NRC issued a White Significance Determination finding with an associated violation to Calvert Cliffs Nuclear Power Plant (Calvert Cliffs). This White finding involved the licensee's failure to develop and implement scheduled preventive maintenance for Agastat E7000 series time delay relays, as required by Technical Specification 5.4.1. Specifically, subsequent to the approval of Engineering Change Package No. ES200100067, issued in March 2001, the licensee did not replace the relays within the vendor recommended 10-year lifetime, nor establish a performance monitoring program. Consequently, on February 18, 2010, an Agastat E7000 series time delay relay that had a lifetime in excess of 10 years, used in the 2B emergency diesel generator (EDG) protective logic, timed out early and failed to support a demand fast start and run of the 2B EDG. This resulted in the EDG becoming inoperable with the resultant loss of alternating current to the 24 safeguards bus during the dual unit trip that occurred on February 18, 2010.

### Florida Power and Light Company (Turkey Point Nuclear Plant Unit 3) EA-10-037

On June 21, 2010, the NRC issued a White finding with two associated violations to Florida Power and Light Company (FP&L) as a result of inspections at Turkey Point Nuclear Plant Unit 3. This White finding involves the licensee's failure to adequately address degradation of Boraflex, a fixed neutron absorber material used in the Turkey Point Unit 3 spent fuel pool. Boraflex degradation resulted in a reduction in the Boron−10 areal density of the spent fuel storage racks such that, when considering the biases and uncertainties identified in Chapter 9 of the Updated Final Safety Analysis Report, the effective neutron multiplication factor would not have been maintained less than 1.0 if the spent fuel pool had been flooded with unborated water. The NRC identified that FP&L had violated 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," which requires that conditions adverse to quality be promptly identified and corrected, and Technical Specification 5.5.1.1.a, which requires that the spent fuel storage racks be maintained with an effective neutron multiplication factor less than 1.0 if flooded with unborated water, when considering the biases and uncertainties described in the Updated Final Safety Analysis Report. The NRC also issued FP&L a Severity Level III Notice of Violation with a proposed

$70,000 civil penalty for failure to comply with 10 CFR 50.73, which requires, in part, that licensees report any condition prohibited by the plant's Technical Specifications. As discussed, Boraflex degradation led to a condition prohibited by Turkey Point Unit 3 Technical Specifications, but this condition was not reported to the NRC as required by 10 CFR 50.73.

Duke Energy Carolinas, LLC (William B. McGuire Nuclear Station) EA-09-252

On June 2, 2010, an immediately effective Confirmatory Order was issued to Duke Energy Carolinas, LLC. (Duke Energy), to confirm commitments made as a result of an Alternative Dispute Resolution mediation session held on March 29, 2010. This enforcement action is based on two violations of NRC requirements at the McGuire Nuclear Station, which included a contract employee introducing and using marijuana inside the Protected Area and a contract employee failing to immediately report the event to Duke Energy management. Duke Energy agreed to take the following actions: (1) develop a summary of lessons learned from the facts and circumstances surrounding the apparent violations and communicate this summary to its fleet wide employees; (2) perform a self-assessment of the adequacy of the programs and processes in place to detect and deter the introduction of illegal drugs and alcohol into the Protected Area of Duke Energy's nuclear stations and implement appropriate enhancements in accordance with Duke Energy's corrective action program; and (3) prior to December 31, 2010, perform an effectiveness review of the corrective actions identified in (1) and (2) above. This is in addition to several other corrective actions already completed by Duke Energy. In consideration of these commitments, and the corrective actions already completed by Duke Energy, the NRC agreed that the non-compliances will be characterized as a violation of 10 CFR Part 26, with a significance of Severity Level IV.

Southern Nuclear Operating Company, Inc. (Edwin I. Hatch Nuclear Plant) EA-10-009

On May 12, 2010, a Notice of Violation (NOV) was issued to Southern Nuclear Operating Company, Inc. for a violation associated with a White Significance Determination Finding as a result of inspections at the Edwin I. Hatch Nuclear Plant. The White finding involved the licensee's failure to meet Technical Specifications. From 1988 to 2009 the licensee failed to establish and perform preventative maintenance activities on components having a specific lifetime. This resulted in a capacitor failure on a circuit card, during a surveillance test of an emergency diesel generator (EDG) and caused the EDG to be declared inoperable.

FirstEnergy Nuclear Operating Company (Davis-Besse Nuclear Power Station) EA-09-332

On April 30, 2010, a Notice of Violation (NOV) was issued to FirstEnergy Nuclear Operating Company for a Severity Level III problem for the failure to implement: (1) 10 CFR 50.71 "Maintenance of records, making of reports" and (2) 10 CFR 50, Appendix B, Criterion III, "Design control." In July 1999, the licensee submitted a license amendment request to eliminate as found testing criteria by using the past data for double O ring data and was approved by the NRC. However, the licensee staff did not update this fact in their updated final safety analysis report. The licensee also changed from the double O ring design to a flat gasket design which did not have the same reliable history as the double O ring and failed to translate this fact into the licensing basis at time of installation.

Tennessee Valley Authority (Browns Ferry Nuclear Plant) EA-09-307

On April 19, 2010, a Notice of Violations was issued to Tennessee Valley Authority (TVA) for violations associated with Yellow and White Significance Determination Findings as a result of inspections at the Browns Ferry Nuclear Plant. The Yellow finding involved the licensee's failure to meet the requirements of 10 CFR 50, Appendix R, III.G, fire protection of safe shutdown capability. There were multiple examples of the licensee not providing fire protection features capable of limiting fire damage and failing to ensure one train of systems or components was free of fire damage by approved methods. Compensatory measures are currently in place and long term corrective actions will be implemented. The White finding involved the licensee's failure to meet the requirements of a Technical Specification. This involved the inappropriate revision to a procedure which could have delayed proper operator response to a major disabling fire event. The procedure has been revised to prevent such an issue from occurring.

Florida Power & Light Company (St. Lucie Nuclear Plant) EA-09-321

On April 19, 2010, a Notice of Violation was issued to Florida Power & Light Company for a violation associated with a Yellow Significance Determination Finding as a result of inspections at the St. Lucie Nuclear Plant. The Yellow finding involved the licensee's failure to meet the requirements of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." In 2008, the licensee experienced an air in-leakage event into the closed cooling water (CCW) system which

affected the system's ability to supply adequate cooling to essential equipment. Their troubleshooting and corrective actions failed to identify the source of the air in-leakage, which resulted in a similar event in 2009.

Exelon Generation Company, LLC (Braidwood Nuclear Power Station) EA-09-259

On February 25, 2010, a Notice of Violation was issued to Exelon Generation Company, LLC, for a violation associated with a White Significance Determination Finding as a result of inspections at the Braidwood Nuclear Power Station. This finding involved a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which requires, in part, that measures be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components.

Specifically, on June 24, 2009, a safety-related valve failed to stroke full open during a surveillance testing procedure. Following the test failure, the licensee determined that water entered the valve actuator through conduit penetration and caused corrosion to the valve internals, which caused the valve not to fully open.

FirstEnergy Nuclear Operating Company (Davis-Besse Nuclear Power Station) EA-09-283

On February 25, 2010, a Notice of Violation was issued to FirstEnergy Nuclear Operating Company for a violation associated with a White Significance Determination Finding as a result of inspections at the Davis-Besse Nuclear Power Station. This finding involved a violation of 10 CFR 50.54(q) which requires, in part, that a holder of an operating license shall follow emergency plans which meet the standards in 10 CFR 50.47(b). 10 CFR 50.47(b) requires, in part, that the licensee have a standard emergency classification and action level scheme in use. The Davis-Besse Emergency Plan requires, in part, that the Shift Manager shall verify the indication of an off-normal event and classify the situation.

Specifically, on June 25, 2009, the Shift Manager failed to verify the indications of an off-normal event or reported sighting, assess the information available from valid indications or reports of an explosion, and classify the situation as an Alert in accordance with the Emergency Action Level Conditions during an actual event.

PPL Susquehanna, LLC (Susquehanna Steam Electric Station) EA-09-248

On January 28, 2010, a Notice of Violation for a Severity Level III violation was issued to PPL Susquehanna, LLC. This finding involved a violation of 10 CFR Part 55.21 which requires, in part, that the licensed operator receives a medical examination by a physician every two years and meets the requirements of 10 CFR 55.33(a)(1). 10 CFR 55.33(a)(1) states, in part, the medical condition of the applicant will not adversely affect the performance of assigned duties or cause operational errors endangering public health and safety. 10 CFR 55.33(b) states, in part, if an applicant's general medical condition does not meet the minimum standards under 10 CFR 55.33(a)(1), the Commission may approve the application and include conditions in the license to accommodate the medical defect. 10 CFR 55.23 requires, in part, that a facility licensee shall certify the medical fitness of an applicant. PPL certified that it used the guidance of ANSI/ANS 3.4 1983 which describes the health requirements.

Contrary to the above, in 2009, a PPL operator did not meet a certain medical prerequisite for performing NRC-licensed operator activities. Specifically, on three separate occasions, the licensed operator performed duties, even though a change in his license condition existed, as found by a medical examination.

Entergy Nuclear Operations, Inc. (Palisades Nuclear Plant) EA-09-269

On January 20, 2010, a Notice of Violation was issued to Entergy Nuclear Operations, Inc. for a violation associated with a White Significance Determination Finding as a result of inspections at the Palisades Nuclear Plant. This White finding involved the licensee's failure to meet the requirements of Technical Specification (TS) for fuel storage in the spent fuel pool (SFP). Specifically, the Region I spent fuel pool storage rack neutron absorber had deteriorated over the life of the plant and was less than required by TS. Corrective actions are currently in place for additional controls of the spent fuel pool.

Entergy Operations, Inc. (Waterford Steam Electric Station) EA-09-018

On January 14, 2010, the NRC issued a Notice of Violation to Entergy Operations, Inc. for a

violation of Technical Specification 6.8.1.a, "Procedures and Programs," at Waterford Steam Electric Station Unit 3. The violation, which is associated with a White Significance Determination Process finding, involved the failure to properly follow all procedural steps during replacement of the safety-related Train B 125 Vdc battery in May 2008. Specifically, following replacement of the battery, the licensee did not: (1) adequately torque all of the affected intercell connections, (2) obtain the required quality control inspector verification that all affected connections were properly tightened, (3) ensure that all the necessary intercell resistance checks were performed, and (4) obtain quality control verification that the intercell resistance checks met Technical Specification limits. As a result, an intercell connection on the battery loosened over time and on September 2, 2008, the battery was found to be inoperable during testing.

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