

August 5, 2010

MEMORANDUM TO: Margie Kotzalas
Senior Operations Coordinator
Office of the Executive Director for Operations

FROM: Michael T. Markley, Chief /RA by Balwant K. Singal for/
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: G20100476/EDATS: OEDO-2010-0609 - BRIEFING PACKAGE FOR
DROP-IN VISIT BY UNION ELECTRIC COMPANY OFFICIAL WITH
EXECUTIVE DIRECTOR FOR OPERATIONS, DEPUTY EXECUTIVE
DIRECTOR FOR REACTOR AND PREPAREDNESS PROGRAMS, AND
DEPUTY EXECUTIVE DIRECTOR FOR MATERIALS, WASTE,
RESEARCH, STATE, TRIBAL AND COMPLIANCE PROGRAMS, ON
AUGUST 13, 2010, FOR CALLAWAY PLANT, UNIT 1 (TAC NO. ME4340)

Enclosed is the briefing package in support of the August 13, 2010, drop-in visit by Union Electric Company (UE) official, Mr. Adam C. Heflin, Senior Vice President and Chief Nuclear Officer, regarding Callaway Plant, Unit 1. The UE official will meet with Mr. R. William Borchardt, Executive Director for Operations, Martin Virgilio, Deputy Executive Director for Reactor and Preparedness Programs, and Mr. Michael Weber, Deputy Executive Director for Materials, Waste, Research, State, Tribal and Compliance Programs.

This information has been coordinated with Region IV and the Office of New Reactors. Please contact Mohan Thadani at 301-415-1476, if you need any additional information.

Docket No. 50-483

Enclosure:
Briefing Package

cc w/encl:
E. Leeds, NRR
C. Pederson, NRR
J. Grobe, NRR
J. Giitter, NRR/DORL
R. Nelson, NRR/DORL
M. Johnson, NRO
A. Vogel, RIV/DRP
G. Miller, RIV/DRP/RPB-B
E. Williamson, OGC

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accordance with the Freedom of Information Act.
Exemptions S, 6, 7A
FOIA/PA 2012-50039

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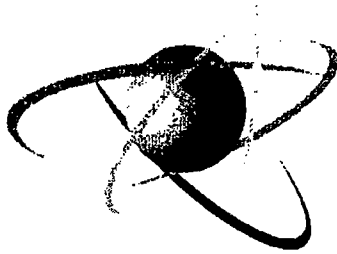
NONPUBLIC	RidsNrrOd Resource	RidsNrrPMCallaway Resource
LPLIV R/F	RidsNrrAdes Resource	RidsNrrMailCenter Resource
RidsEdoMailCenter Resource	RidsNrrAdro Resource	FAST Resource
ECollins, RIV	RidsNrrDori Resource	RidsOgcRp Resource
RidsNroDnrNarp Resource	RidsNrrDoriLp4 Resource	RidsRgn4MailCenter Resource
RidsNroOd Resource	RidsNrrLAJBurkhardt Resource	

ADAMS Accession Nos. PKG ML102070372 (Incoming ML102080025, Briefing Package ML102070374,
EDO Closeout E-mail ML102280032 (*) concurrence via e-mail

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	RIV/DRP/BC	NRO/DNRL/NARP/EPB	DORL/LPL4/BC
NAME	MThadani	JBurkhardt	GMiller*	JColaccino*	MMarkley BSingal for
DATE	8/4/10	7/29/10	8/4/10	8/4/10	8/5/10

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U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Union Electric Company

Callaway Plant Unit 1

DROP-IN VISIT

August 13, 2010

DROP-IN VISIT BY UNION ELECTRIC COMPANY

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TAB 1A

Drop-In Visit Agenda
August 13, 2010

ITINERARY

TIME	PERSON VISITED	CONTACT PERSON	PHONE
1:00 p.m. – 2:00 p.m.	William Borchardt, EDO; Marty Virgilio, DEDR, and Michael Weber, DEDMRT	Renee Taylor	(301)415-1700

**VISITORS REPRESENTING
CALLAWAY PLANT**

- Mr. Adam C. Heflin, Senior Vice President and Chief Nuclear Officer

TOPICS OF DISCUSSION
(Provided by Union Electric Company)

- 2003 Reactivity Management Event of Inadvertent Passive Shutdown; Exchange Perspectives; Confirm they are doing everything they can
- Mitigating System Performance Index (MSPI) Emergency AC Power
- Refuel 17 Control Rod Issue
- Safety System Functional Failures (SSFF)
- Security Rule (Physical and Cyber)
- Callaway Plant, Unit 1 Plant Performance
- New Plant Status

Facility Data
Callaway Plant Unit 1

Licensee: Union Electric Company (UE)
Location: 25 miles ENE of Jefferson City, Missouri
County: Callaway County, Missouri
Docket No.: 50-483
License No.: NPF-30
CP Issuance Date: 04/16/1976
OL Issuance Date: 10/18/1984 (full power), 06/11/1984 (low power)
OL Expiration Date: 10/18/2024

Plant Characteristics:

Reactor Type: PWR - 4 Loop
NSSS Vendor: Westinghouse standardized nuclear unit power plant system design
Power Level: 1,236 MWe (3,565 MWt)
Containment Type: Dry ambient pressure
Architect/Engineer: Bechtel
Constructor: Daniel Construction
Turbine Supplier: General Electric
Turbine design: Tandem-compound type (single shaft) with one double-flow high-pressure turbine and three double-flow low-pressure turbines
Condenser Cooling Method: Natural draft cooling tower
Condenser Cooling Water: Missouri River

Site and Licensee Unique Features:

Plant Design: Westinghouse standard plant design

Licensee: The licensee has entered a joint venture with five other utilities in the Strategic Teaming and Resource Sharing (STARS) group. The group has had several meetings with the NRC staff and has developed joint applications from the licensees to minimize their and the NRC staff's resources. The other licensees are Arizona Public Service Company, Pacific Gas and Electric Company, STP Nuclear Operating Company, TXU Energy, and Wolf Creek Nuclear Operating Corporation.

Reactor Oversight Process Information

Callaway Plant Unit 1

On March 3, 2010, the U.S. Nuclear Regulatory Commission (NRC) staff issued the Annual Assessment Letter (ADAMS Accession No. ML090630802) for Callaway and determined that overall Callaway operated in a manner that preserved public health and safety and fully met all cornerstone objectives. Plant performance for the most recent quarter, as well as for the first three quarters of the assessment cycle, was within the Licensee Response Column of the NRC's Action Matrix, based on all inspection findings being classified as having very low safety significance (Green) and all performance indicators indicating performance at a level requiring no additional NRC oversight (Green).

On May 5, 2010, the U.S. Nuclear Regulatory Commission (NRC) staff issued a Follow-up Assessment Letter (ADAMS Accession No. ML101250591) for Callaway and determined that overall Callaway operated in a manner that preserved the public's health and safety and fully met the cornerstone objectives. A review identified that Callaway had crossed the threshold from Green to White for the Mitigating Systems Performance Index – Emergency AC Power performance indicator. On March 30, 2010, the Train A emergency diesel generator tripped unexpectedly during a planned 24-hour surveillance run due to a lack of lubrication to the governor drive splined sleeve connection that resulted in a loss of hydraulic oil pressure in the engine's governor. Combining this run failure with a previous run failure in December 2008 resulting from a leaking gasket in the emergency diesel jacket cooling water system has resulted in the Mitigating Systems Performance Index – Emergency AC Power performance indicator White. As a result the NRC staff has assessed Callaway Plant Performance transitioned into the Regulatory Response column of the NRC's Action Matrix.

The 2010 Annual Mid-cycle Assessment Meeting will meet August 10, 2010, to discuss the most recent plant performance. The Mitigating Systems Performance Index – Emergency AC Power performance indicator was White through the second quarter of 2010. The second quarter/2010 Performance Summary (Most Significant Inspection Findings) for Callaway can be viewed at the following URL:

http://nrr10.nrc.gov/NRR/OVERSIGHT/ASSESS/CALL/call_chart.html.

Current Issues

A. EXPECTED DISCUSSION TOPICS

2003 Reactivity Management Event of Inadvertent Passive Shutdown; Exchange Perspectives; Confirm they are doing everything they can

On April 29 and April 30, 2010, a widely known concerned individual and past employee of Union Electric Company (UE) (licensee for Callaway Plant, Unit 1) and current NRC employee, submitted two requests to NRC as public petitions pursuant to Title 10 of *Code of Federal Regulations* (10 CFR) Section 2.206. The first petition, dated April 29, 2010, requested NRC to issue an Information Notice (IN) to NRC licensees to inform them of an October 21, 2003, event at Callaway Plant, Unit 1 (Callaway event), and the second request for petition dated April 30, 2010, asked that NRC revise its Standard Technical Specifications (TSs) to incorporate lessons learned from the October 2003 Callaway event.

In this event, the licensee was shutting down the plant in order to comply with a shutdown Technical Specification Action Statement for a failed safety-related inverter. Operators were executing the shutdown procedure and tripped the main turbine. Upon this action, the reactor went subcritical due to a combination of a slight temperature rise and xenon buildup. Operators did not insert control rods for another 106 minutes. This event was the subject of an allegation which alleged that operators were covering up the fact that they inadvertently let the reactor go subcritical. Allegedly, by intentionally delaying the rod insertion, operators could cover up the fact that they let the reactor go subcritical from plant management. The NRC staff conducted independent inspections, an Office of Investigations (OI) investigation, and an OI assist in assessing this allegation. The concerned individual was interviewed two times by an OI investigator and the NRC staff met two times with the concerned individual and a representative of Congressman Kucinich's staff. Separate telephone calls also occurred with the concerned individual and a representative of Congressman Kucinich's staff, as well as telephonic discussions with a Missouri State Representative. Region IV follow-up of this case determined that rod insertion was not timely and that a violation of NRC requirements involving reporting of the Technical Specification minimum temperature for criticality in the corrective action program was identified. Region IV has inspected the licensee's corrective actions for this event and found them to be positive improvements for safety. Region IV has submitted an IN addressing inadequate execution of evolutions involving reactivity management at nuclear power plants.

The concerned individual's requests are based on his concern that while descending in power from Mode 1, the reactors should not stay in Mode 2 for more than a minimum-required duration for transition to Mode 3. The reason for this concern is that during Mode 2 descending, residence in Mode 2 over extended period of time could result in reactivity drop due to presence of Xenon-135, and may result in inadvertent passive shutdown of the reactor.

(b)(5)

The NRC staff reviewed the two petitions. Based on that review, the staff concluded that the requests did not ask NRC to take any enforcement actions. Therefore, the petitions did not meet the key criterion for consideration as petitions pursuant to 10 CFR 2.206. Consequently, the staff informed the petitioner that his request cannot be reviewed under 10 CFR 2.206. However, as required by Management Directive 8.11, "Review Process for 10 CFR 2.206 Petitions," the staff informed the petitioner by letter dated May 27, 2010 (ADAMS Accession No. ML101380320), that his concerns will be reviewed as a routine correspondence. Accordingly, the two requests are under staff review as routine correspondence. The staff will share the results of its review with the licensee and the petitioner.

Mitigating System Performance Index (MSPI) Emergency AC Power

Two Emergency Diesel Failures, one in December 2008 and one in March 2010, caused this MSPI indicator to exceed the Green to White threshold. The 2008 failure was emergency diesel generator (EDG) jacket water gasket leak that would have caused the EDG to not be able to meet its mission time before damaging the EDG. The cause of the leak was use of an inappropriate gasket material type for a two bolt flange arrangement. The second failure was due also to an inappropriate gasket that was designed to have oil flow holes maintaining oil flow to the EDG governor gearing; however, a 1999 replacement used a non Original Equipment Manufactured gasket without the flow holes. Over time, the lack of lubricating oil to a splined shaft on the governor gearing resulted in the inability to control the EDG speed.

Refuel 17 Control Rod Issue

The licensee had to abort a plant startup in May of 2010 because one control rod did not insert fully during rod drop testing. After initial troubleshooting, the licensee cooled the plant down and, at a plant temperature of 260 degrees Fahrenheit (°F), the rod dropped to its fully inserted position. With Westinghouse assistance, the licensee was able to determine the rod guide vanes had been damaged and were wedged in a guide tube opening. Also, with Westinghouse assistance, the licensee was able to remove the damaged control rod, replace it and the associated guide tube, and start the plant back up. The licensee believes that the most likely cause for the control rod damage was foreign material. The licensee was not able to find the foreign material.

Safety System Functional Failures (SSFFs)

The licensee has approached the Green-White threshold of this performance indicator. The licensee had reported at the end of the second quarter of 2010 five examples of SSFFs within the last 3 years (The Green-White threshold for SSFFs is >5.0).

(b)(5)

Callaway Plant, Unit 1 Performance

UE established a Site Performance Improvement Plan for Callaway on December 29, 2008, with a goal to establish a culture that understands and executes the performance improvement process.

The licensee established a Site Human Performance Improvement Plan on January 25, 2009, with a goal to reinvigorate site performance in event prevention.

The licensee established several focus areas for 2009 aimed at improving performance. These focus areas include understanding and using human performance event prevention tools, achieving excellence in written instruction use and adherence, strengthening the licensee's performance improvement culture, and assuring successful refueling outage preparations and execution.

NRC Region IV conducted a special inspection in June 2009 to address the failure of turbine-driven auxiliary feedwater pump (TDAFP) steam trip and throttle valve to open. There were no findings greater than Green. However, subsequent additional failure of TDAFP failure has pushed the MSPI to its Green-White threshold.

A series of unplanned reactor trips occurred just after the fall 2008 refueling outage:

- On November 11, 2008, the reactor tripped after main feedwater pump trip
- On December 11, 2008, the reactor tripped after C condensate pump tripped due to an electrical motor fault
- On December 12, 2008, the reactor tripped after B condensate pump tripped on electrical fault

Security Rule (Physical and Cyber)

- **Physical Security**

UE met the security rule implementation at Callaway Plant Unit 1 by March 31, 2010. The licensee has indicated that proactive actions have positioned it well to meet the change requirements for parameter intrusion detection and changes to force-on-force exercises.

- **Cyber Security**

On November 23, 2009, UE submitted its request for approval of an amendment to the facility operating license for Callaway pursuant to 10 CFR 50.4 and 10 CFR 50.90. UE requested approval of the Callaway Cyber Security Plan and its proposed implementation schedule. The amendment will add a sentence to the physical protection license condition to require UE to fully implement and maintain in effect all provisions of the Commission-approved Cyber Security Plan.

The NRC staff is reviewing the licensee's request along with other plant submittals generically and has taken the following actions:

- Review teams have been formed and trained.

- A Standard Review Plan has been developed.
- Generic requests for additional information (RAI) have been drafted.
- Acceptance review and the generation of site-specific RAIs are continuing.

New Plant Status

In a letter dated May 1, 2008 (ADAMS Accession NO. ML081280404), AmerenUE informed NRC that the licensee expected to submit on or before August 4, 2008, a complete combined operating license (COL) application for the proposed Callaway Plant Unit 2 to be located in Callaway County, Missouri. NRC conducted a Public Outreach Meeting in Fulton, Missouri, on July 9, 2008, to discuss with the public AmerenUE's plan to submit the COL application for Callaway Plant Unit 2 and explain how the public can participate in the NRC's review and approval processes.

By letter dated April 28, 2009 (ADAMS Accession No. ML091210159), AmerenUE reported that it was suspending its efforts to build a nuclear power plant in Missouri. In the same letter, AmerenUE requested that the NRC staff continue the current activities associated with the NRC staff's review of the application while AmerenUE reviewed its options associated with the license application for the new nuclear unit at the Callaway site.

On June 23, 2009 (ADAMS Accession No. ML091750988), AmerenUE informed NRC that it had determined that it is in AmerenUE's best interests to suspend the review of the Callaway Plant Unit 2 COL application and requested that the NRC staff suspend all activities relating to the COL application. By letter dated June 29, 2009 (ADAMS Accession No. ML091750665), the NRC staff informed the applicant that the review activities have been suspended as requested by the applicant.

B. OTHER TOPICS OF INTEREST

Callaway Regulatory Issues

Probabilistic Risk Assessment (PRA) Upgrade/Risk-Managed Technical Specifications

During a meeting with the NRC staff on September 17, 2009, the licensee presented its plan for upgrading its probabilistic risk assessment (PRA) capabilities and pursuing risk-informed license amendments for extending the TS completion times and for moving the surveillance frequencies from the TS to a licensee-controlled Surveillance Frequency Control Program. These amendments are expected to conform to NRC's guidance under its risk-informed initiatives 4b and 5b of its risk-informed activities. The licensee stated that the approval of the proposed license amendment requests would obviate the licensee's need (1) to ask the NRC for certain discretions of regulatory enforcements or shut down the plant when recovery actions cannot be completed in the allowed outage times (completion times) and (2) to ask for license amendments for amending the surveillance frequencies that are deemed to be impractical. In all cases, neutrality of risk at the site will be maintained. The NRC has approved similar risk-informed requests for South Texas Project Units 1 and 2 (pilot plant) and Diablo Canyon Power Plant Units 1 and 2. The licensee's presentation included a discussion of plans to upgrade its

PRA capability in accordance with guidance in Regulatory Guide (RG) 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities."

In accordance with requirements of 10 CFR 50.48(c), the licensee is transitioning to adopt National Fire Protection Association (NFPA) 805, "Performance-Based Standard for Fire Protection of Light-Water Reactor Electric Generating Plants," for Callaway Plant Unit 1.

Industry Buried Piping Initiative

To alleviate industry and regulatory concerns regarding continued of degradation of essential service water (ESW) piping due to microbiological-induced corrosion, the licensee replaced corroded carbon steel piping with high-density polyethylene (HDPE) piping. The NRC staff approved the licensee's requests, and the licensee completed the replacement of the ESW buried pipe with HDPE pipe during fall of 2008 and spring of 2009. The replacement was a first-of-a-kind use of HDPE in a nuclear safety application. It is expected that these actions will sufficiently address the microbiological-induced corrosion problems at Callaway.

Labor/Management Issues

None.

License Renewal Activities

The Strategic Teaming and Resource Sharing (STARS) group has informed the NRC that its members intend to submit requests for license renewal, but has not provided a schedule for Callaway.

Escalated Enforcement, Non-Green Findings, and Non-Green Performance Indicators

None.

Open Investigations

None.

Open Allegations

Currently, there are two open allegations at Callaway. The open allegations relate to a fitness-for-duty issue and a security issue.

Congressional Interest

The concerned individual from a past allegation regarding the October 2003 shutdown reactivity event at the Callaway Plant referenced above has brought his concerns to the following members of Congress:

- The staff of Congressman Dennis Kucinich (D-Ohio) was briefed by the NRC by telephone and in person along with the concerned individual in 2008 and 2009,
- Senator Richard J. Durban (D-Illinois) was briefed by the NRC in 2007, and
- Representative Jeanette Mott Oxford (D-Missouri House of Representatives District 59) was briefed by the NRC in 2009.

State Issues

None.

Harassment and Intimidation Issues

(b)(7)(A)

2.206 Petitions

See Discussion Topics.

Selected News Articles

Whistleblower Complaints Often Resolved Through Alternative Dispute Resolution. In a lengthy, 1,900-word piece the Missourian (5/20/2010, Sweet) reports on the whistleblower case of Larry Criscione, who "wants to inspect commercial nuclear reactors because he wants to hold people accountable." When he left the Navy, Criscione "became a senior reactor operator at the Callaway Nuclear Plant south of Fulton. Now, he works behind a desk for the Nuclear Regulatory Commission. Becoming an inspector, he said, would allow him to ensure more safety in the nuclear power industry. 'I found a lot of the people at the NRC don't walk the talk,' Criscione said. 'They'll speak the safety culture, but when you bring a problem to them, they act like bureaucrats.'" The Missourian notes that when Criscione's employment at Callaway plant ended, AmerenUE paid him "\$550,000 to settle a complaint that the utility discriminated against him after he raised a safety concern." The piece adds background information on Criscione's case in particular and examines other complaints from whistleblowers.

Former Callaway Plant Worker Criticizes NRC For Failing To Investigate Incident. The Associated Press (6/18/2009) reports, "A former AmerenUE engineer is accusing the utility and the [NRC] of failing to adequately investigate a 2003 incident that led to a two-hour unplanned shutdown at the Callaway reactor." An NRC "investigation found that control room operators delayed a move to insert control rods -- equipment required to keep the reactor shut down -- since the error occurred just before a scheduled shutdown for maintenance. The NRC called

the delay 'not prudent,' but noted it did not threaten human safety." AmerenUE nuclear engineer Lawrence Criscione "claimed retaliation by his supervisors, including a negative performance review and the loss of his operators' license" after he says he discovered "the problem four years after it occurred during a routine review and [alerted] plant managers." The AP adds, "While acknowledging that the risk to the public from the Oct. 21, 2003, incident was minimal, Criscione suggests that the plant's handling of what he calls a 'cover-up' should raise questions about public confidence in Ameren's operations."

In a shorter version, the Associated Press (6/18/2009) notes, "Documents obtained by The Associated Press show he was paid more than \$500,000 in a confidential settlement in exchange for his resignation in 2008 and an agreement to not pursue any future legal claims against the St. Louis-based utility."

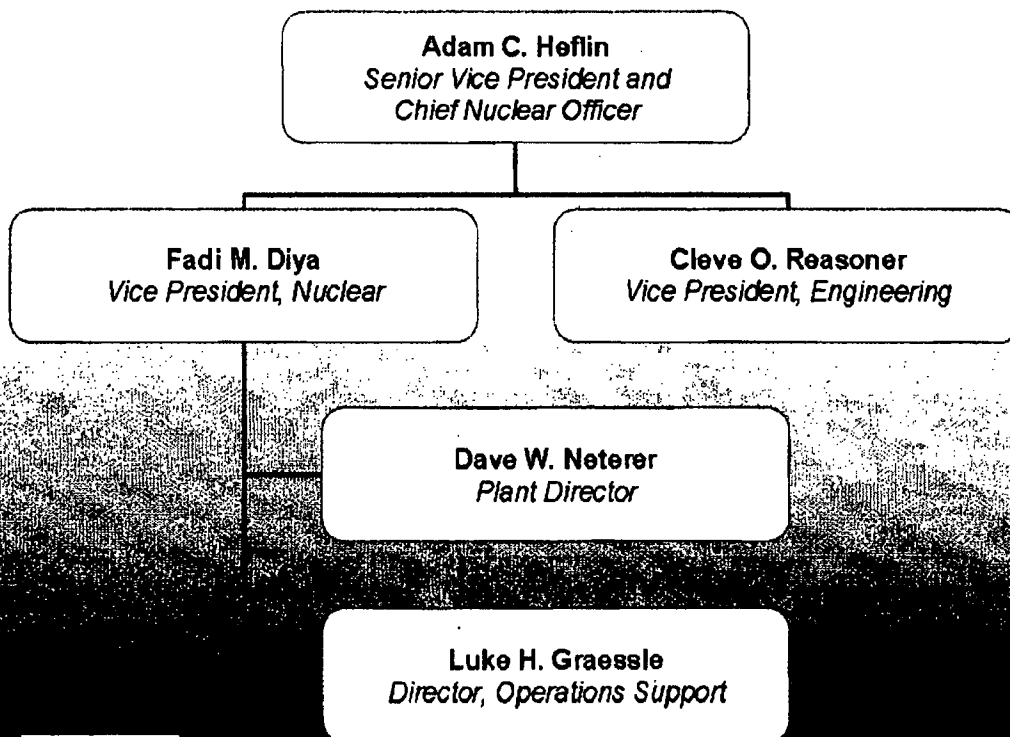
Shaw Group Tapped To Provide Services For Ameren's Callaway Plant. The New Orleans Times-Picayune (9/18/2009, 178K) reports that the "Shaw Group has been awarded a six-year contract with Ameren Corp. of St. Louis to provide nuclear maintenance services to the Callaway nuclear plant in Missouri." The contract calls for Shaw to "provide maintenance and capital construction services. Shaw did not disclose how much it will be paid for the work."

Callaway Power Decommissioning Fund Shrinking. The Missourian (7/24/2009, Haugsby, 16K) reports on the rising costs and the "shrinking" funds to decommission "AmerenUE's nuclear plant in Callaway County," which "is licensed to generate electricity through 2024." The Missourian adds, "The fund for decommissioning the Callaway plant held \$268 million in 2007, but the amount had shrunk to \$236.19 million by 2009, according to biennial reports filed with the Nuclear Regulatory Commission by AmerenUE, the utility that oversees the Callaway plant. Over the same period of time, the estimated costs of decommissioning the plant increased from \$586.52 million to \$693.91 million."

Significant Reportable Events

- On February 19, 2009, while operating at 100 percent reactor power, multiple control room annunciators actuated in response to a power supply failure in the balance-of-plant engineered safety features actuation system channel 1 logic cabinet resulting in a plant shutdown.
- On February 19, 2009, while at 0 percent reactor power, an Unusual Event was declared due to a main generator hydrogen gas leak. There was no fire, and no offsite response was required.
- On May 25, 2009, while operating at 100 percent power, the TDAFP failed to start during surveillance testing. The failure occurred due to excessive frictional loading from the cumulative effects of a lack of lubrication effectiveness coupled with an incorrectly installed thrust washer for the TDAFP trip and throttle valve. The NRC conducted a special inspection in June 2009.
- On April 2, 2010, the licensee requested and the NRC granted a Notice of Enforcement Discretion (NOED) to enable the licensee to complete repairs to an EDG. A lack of lubricating oil to a splined shaft on the governor gearing resulted in the inability to control the EDG. With the NOED, the licensee was able to effect repairs without shutting down the plant.

Facility Organization



Revised 12-02-09

TAB 8

Biographical Data of Principal Officer

- 2 -

ADAM C. HEFLIN
Senior Vice President and
Chief Nuclear Officer/AmerenUE



Adam C. Heflin has been named Senior Vice President and Chief Nuclear Officer, AmerenUE, effective July 1, 2008. In this role, Mr. Heflin is responsible for the safe operation of Callaway Plant.

Mr. Heflin joined AmerenUE in 2005. He started his nuclear career in the U.S. Navy where he served on the USS Flasher fast attack submarine. In 1990, Mr. Heflin accepted a position as an auxiliary operator at Entergy's Arkansas Nuclear One. While at Arkansas Nuclear One, Mr. Heflin earned both a Reactor Operator and a Senior Reactor Operator license. During his tenure at Arkansas Nuclear One, Mr. Heflin held various positions including Shift Manager, Outage Manager, Outage Director, Operations Manager, and Acting Plant Manager.

A native of Monte Vista, Colorado, he holds a bachelor's degree in general/mechanical engineering from the Arkansas Tech University. He has earned credits toward a master's degree in operations management from the University of Arkansas.

(b)(6)