

July 9, 2007

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

Ladies and Gentlemen:

ULNRC-05426



**DOCKET NUMBER 50-483  
CALLAWAY PLANT UNIT 1  
UNION ELECTRIC CO.  
60-DAY REPORT FOR FIRST REVISED NRC ORDER EA-03-009  
(REGARDING INTERIM INSPECTION REQUIREMENTS  
FOR REACTOR PRESSURE VESSEL HEADS  
AT PRESSURIZED WATER REACTORS)**

Reference: AmerenUE letter ULNRC-04957, "Response to Order EA-03-009, Revision 1, 'Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors,'" dated March 5, 2004

On February 11, 2003 the NRC issued Order EA-03-009 providing interim inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactor (PWR) facilities. The order was subsequently revised, and on February 20, 2004 the NRC issued First Revised Order EA-03-009 (i.e., "First Revised Order Modifying Licenses") thus superseding the original Order. In response to First Revised Order EA-03-009, Union Electric Co. (AmerenUE) submitted a letter dated March 5, 2004 (above Reference) wherein AmerenUE consented to the revised NRC Order for Callaway Plant.

Sections IV.C and IV.D of the revised Order specify requirements for the performance of inspections of the RPV head and head penetration nozzles, and for inspections to identify potential boric acid leaks from pressure-retaining components located above the RPV head, respectively. These inspections are to be performed during refueling outages in accordance with the schedule specified in the revised Order. Section IV.E of the revised Order requires that for each examination required in Section IV.C, the Licensee shall submit a report detailing the examination results within 60 days after returning the plant to operation. Similarly, Section IV.E also requires that for each examination required in Section IV.D of the revised Order, the Licensee shall submit a report detailing the examination results within 60 days after returning the plant to operation if a leak or boron deposit was found during the examination.

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Pursuant to the report requirements of the revised Order, AmerenUE hereby reports that during Callaway's fifteenth refueling outage (RF15), which was concluded on May 10, 2007, a visual examination to identify potential boric acid leaks from components located above the reactor pressure vessel (RPV) head was performed. No leakage or boron deposits were observed. Further, non-visual nondestructive volumetric examinations of all 78 control rod drive mechanism (CRDM) penetrations, as well as the head vent penetration, were performed. From these examinations, no indications of cracks or leakage pathways were identified, and no flaws needing disposition or corrective action were identified.

Bare metal visual examinations of 100 percent of the RPV head penetrations were also performed. Included was a 360-degree examination around each of the vessel head penetration nozzles as well as the head vent penetration. Visual examination of the RPV head surface was also performed to identify any degradation. From these examinations, no evidence of active leakage or degradation of the RPV head was identified.

Additional details regarding the above-described examinations/inspections are provided in Attachment 1.

No new or additional regulatory commitments are made in this letter. For any questions regarding this report, please contact me at 573-676-8129 or Scott A. Maglio at 573-676-8719.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Executed on: July 9 - 2007



Luke H. Graessle  
Manager – Regulatory Affairs

JAD/TBE/slk

Attachment: 60-Day Report for First Revised NRC Order EA-03-009

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**60-Day Report  
For First Revised NRC Order EA-03-009  
(Regarding Interim Inspection Requirements  
For Reactor Pressure Vessel Heads  
At Pressurized Water Reactors)**

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**60-Day Report for First Revised NRC Order EA-03-009**

**References**

1. First Revised Order Modifying Licenses, EA-03-009, issued via NRC letter dated February 20, 2004, "Issuance of First Revised Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors"
2. AmerenUE letter ULNRC-05416, "Request for Relaxation from Requirements of First Revised NRC Order EA-03-009 (Regarding Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors)", dated 18 May 2007.

**NRC Required Information:**

The first revision of NRC Order EA-03-009, dated February 20, 2004, requires in Section IV.E. that, for each examination required in Section IV.C, the Licensee shall submit a report detailing the examination results within 60 days after returning the plant to operation, and for each examination required in Section IV.D, the Licensee shall submit a report detailing the examination results within 60 days after returning the plant to operation if a leak or boron deposit was found during the examination.

**Callaway Response:**

In accordance with AmerenUE's commitments to Revised Order EA-03-009 (as established in AmerenUE's response to the revised Order per Reference 1), the examinations required in Sections IV.C.(5)(a), IV.C.(5)(b), and IV.D of the revised Order were performed during Callaway's 15<sup>th</sup> refueling outage (RF-15) which was concluded on May 10, 2007. Results of the examinations are as follows.

At the beginning of the outage, a visual examination of pressure retaining components above the reactor pressure vessel (RPV) head in accordance with section IV.D of the revised Order was performed. No leaks were detected and no boron deposits were observed on the components above the RPV head or on top of the insulation.

The bare metal visual examination required in Section IV.C.(5)(a) of the revised Order was performed. No evidence of boric acid leakage or degradation was detected. The examination of the penetrations and head surface area inside the insulation was performed using a video camera delivered by a robotic crawler as well as a video probe inserted manually under the insulation. The surface area of the reactor vessel head outside the insulation down to the vessel flange was examined directly. Noted during the

direct examination outside of the insulation were five minor, white stains. Three of the stains consist of residue left over from cleaning performed in RF13. Of these, two are translucent water drop trails and the remaining one is a white "scuffed" area caused by a scratch pad from the cleaning of residue from a spill. One of the other stains is a small white dot about 1/4" in diameter with no thickness, and the other stain appears to be white dye penetrant developer solution smeared on the side of the head lifting rig. None of these stains is associated with active leakage or vessel degradation.

Non-visual non-destructive examination (NDE) of all 78 control rod drive mechanism (CRDM) penetration tubes and the one vent line penetration tube was performed in accordance with section IV.C.(5)(b) of the revised Order. The CRDM penetration tubes were subject to ultrasonic testing (UT) from the inside diameter. No crack-like indications or UT leak path signals were detected. Examination of the vent line penetration was also performed ultrasonically, along with a dye-penetrant examination of the bottom of the penetration and the J-groove weld. No crack-like indications were detected.

It should be noted that in accordance with section IV, paragraph F of the revised Order, and by letter dated May 18, 2007 (Reference 2), AmerenUE requested relaxation from the nondestructive testing requirements specified in section IV, paragraph C.(5)(b) for five of the RPV head penetrations nozzles, i.e., numbers 74 through 78. The request was to limit the required distance for examination below the lower-most portion of the J-groove weld to 0.39 inches which is where the stresses decay to below 20 ksi tension. The actual coverage obtained below the lowest point at the toe of the J-groove weld for penetrations 75, 76, and 79 was greater than the one-inch minimum per the Order, but the coverage for penetrations 74 and 77 was limited to 0.67 and 0.83 inches, respectively.