

November 8, 2006

Mr. Charles D. Naslund  
Senior Vice President and Chief Nuclear Officer  
Union Electric Company  
Post Office Box 620  
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - REVISION OF EMERGENCY ACTION LEVELS  
IN RADIOLOGICAL EMERGENCY RESPONSE PLAN (TAC NO. MD3192)

Dear Mr. Naslund:

By letter dated October 3, 2006 (ULNRC-05336), as supplemented by letter dated October 24, 2006 (ULNRC-05339), Union Electric Company (UEC) requested approval of a change to Emergency Action Levels (EALs) 3I and 3J of the Radiological Emergency Response Plan for the Callaway Plant, Unit 1 (Callaway). The changes to the EALs will prevent unnecessary declarations of Unusual Events and Alerts at Callaway; however, because UEC considered the changes a reduction in plan effectiveness, the Commission was requested, in accordance with paragraph 50.54(q) of Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the *Code of Federal Regulations* (10 CFR 50.54(q)) to approve the changes.

As discussed in the enclosed safety evaluation, the Commission concludes that the above proposed EAL changes meet the standards of 10 CFR 50.47(b) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50, and are, therefore, acceptable.

Sincerely,

**/RA/**

Jack Donohew, Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure: Safety Evaluation

cc w/encl: See next page

November 8, 2006

Mr. Charles D. Naslund  
Senior Vice President and Chief Nuclear Officer  
Union Electric Company  
Post Office Box 620  
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 - REVISION OF EMERGENCY ACTION LEVELS IN  
RADIOLOGICAL EMERGENCY RESPONSE PLAN (TAC NO. MD3192)

Dear Mr. Naslund:

By letter dated October 3, 2006 (ULNRC-05336), as supplemented by letter dated October 24, 2006 (ULNRC-05339), Union Electric Company (UEC) requested approval of a change to Emergency Action Levels (EALs) 3I and 3J of the Radiological Emergency Response Plan for the Callaway Plant, Unit 1 (Callaway). The changes to the EALs will prevent unnecessary declarations of Unusual Events and Alerts at Callaway; however, because UEC considered the changes a reduction in plan effectiveness, the Commission was requested, in accordance with paragraph 50.54(q) of Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the *Code of Federal Regulations* (10 CFR 50.54(q)) to approve the changes.

As discussed in the enclosed safety evaluation, the Commission concludes that the above proposed EAL changes meet the standards of 10 CFR 50.47(b) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50, and are, therefore, acceptable.

Sincerely,  
*/RA/*  
Jack Donohew, Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure: Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

PUBLIC  
LPLIV Reading RidsNrrDorIDpr  
RidsNrrDorl (CHaney/CHolden)  
RidsNrrDorlLpl4 (DTerao)  
RidsNrrPMJDonohew  
RidsNrrLALFeizollahi  
RidsOgcRp  
RidsAcrcAcnwMailCenter  
RidsRegion4MailCenter  
EWeiss/NSIR/LRB DJohnson/NSIR/LRB

**ADAMS Accession No.:** ML062980278

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NSIR/LRB/BC	OGC-NLO w/changes	NRR/LPL4/BC
NAME	JDonohew	LFeizollahi	EWeiss	BPoole	DTerao
DATE	11/8/06	11/8/06	10/16/06	11/8/06	11/8/06

**OFFICIAL RECORD COPY**

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO CHANGES TO RADIOLOGICAL EMERGENCY RESPONSE PLAN

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By application dated October 3, 2006 (Reference 1), as supplemented by letter dated October 24, 2006 (Reference 2) (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML062850223 and ML063050140, respectively), the Union Electric Company (the licensee) requested changes to the emergency action levels (EALs) for the Plant Radiological Emergency Response Plan (RERP) for the Callaway Plant, Unit 1 (Callaway). The licensee's proposed changes would revise the following EALs:

- Group 3 - EAL I: This EAL is being revised to conform to Nuclear Energy Institute (NEI) 99-01 Revision 4 EAL HU3, "Release of Toxic or Flammable Gases Deemed Detrimental to Normal Operation of the Plant."
- Group 3 - EAL J: This EAL is being revised to conform to NEI 99-01 Revision 4 EAL HA3, "Release of Toxic or Flammable Gases Within or Contiguous to a Vital Area Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or Establish or Maintain Safe Shutdown."

2.0 REGULATORY EVALUATION

2.1 Regulations

Paragraph (a)(1) to Section 50.47, "Emergency Plans," of Part 50, "Domestic Licensing of Production and Utilization Facilities," to Title 10 of the *Code of Federal Regulations* (10 CFR 50.47(a)(1)) states that no initial operating license for a nuclear power reactor will be issued unless a finding is made by the Nuclear Regulatory Commission (NRC) that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Section 50.47 also establishes standards that must be met by the onsite and offsite emergency response plans for NRC staff to make a finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. One of these standards, 50.47(b)(4), requires that emergency plans include a standard emergency classification and action level scheme.

Section IV.B to Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," of 10 CFR Part 50 provides, among other things, that emergency plans are to include EALs to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and EALs to be used for determining when and what type of protective measures should be considered within and outside the site boundary (i.e., onsite and offsite) to protect health and safety. EALs are to be based on in-plant conditions and instrumentation, and on onsite and offsite monitoring. Section IV.B of Appendix E provides that initial EALs shall be discussed and agreed on by the applicant and State and local governmental authorities and be approved by the NRC. EALs are to be reviewed annually thereafter with State and local governmental authorities. In addition, Section IV.B of Appendix E requires that an EAL revision shall be approved by the NRC before implementation if it involves the following:

1. Changing from one EAL scheme to another EAL scheme (e.g., a scheme based on NUREG-0654/FEMA-REP-1 to a scheme based on NUMARC/NESP-007 or NEI 99-01),
2. Proposal of an alternate method for complying with the regulations, or
3. The EAL revision decreases the effectiveness of the emergency plan.

## 2.2 Guidance

Revision 4 to Regulatory Guide (RG) 1.101, issued in July 2003, endorses the guidance contained in NEI 99-01, "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003), as acceptable to the NRC staff as an alternative method to that described in the following guidance for developing EALs required in Section IV of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4):

- Appendix 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980), and
- Nuclear Utilities Management Council (NUMARC) NESP-007, "Methodology for Development of Emergency Action Levels" (Revision 2, January 1992).

Regulatory Issue Summary (RIS) 2003-18, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels," dated October 8, 2003, (as well as Supplements 1 and 2 thereto, dated July 13, 2004, and December 12, 2005, respectively), provides guidance for developing or changing a standard emergency classification and action level scheme. In addition, this RIS provided recommendations to assist licensees, consistent with Section IV.B to Appendix E of Part 50, in determining whether to seek prior NRC approval of deviations from the new guidance.

## 3.0 TECHNICAL EVALUATION

The licensee evaluated the proposed revisions to the Callaway RERP EALs and determined that the revisions would constitute a decrease in the effectiveness of the RERP. As such, it

submitted the proposed EAL changes to the NRC (Reference 1) for approval prior to implementation as required under Section IV.B to Appendix E of Part 50 and 10 CFR 50.54(q). The licensee's application is consistent with the guidance set forth in RIS 2003-01.

The following evaluation by the NRC staff is based on the proposed revision to the EALs in the licensee's application and supplemental letter (Reference 2), which responded to the NRC's request for additional information.

Callaway utilizes an EAL scheme based upon NESP-007, "Methodology for Development of Emergency Action Levels" (Revision 2, January 1992).

The Group 3 EAL I, "Release of Toxic or Flammable Gases Deemed Detrimental to Normal Operation of the Plant," is being revised by the licensee to conform to NEI 99-01 (Revision 4), EAL HU3. This EAL is conservative because, as stated by the licensee, the EAL initiating condition for release of toxic or flammable gases is reached at a lower initiating level than that set forth in NEI 99-01, Revision 4, which in effect directs the licensee to declare an emergency event sooner than is necessary or required during normal plant operations involving toxic or flammable gases. Because this conservatism is not required by the regulations and requires the licensee to declare events sooner than is necessary, the licensee is seeking relief by requesting a change to remove the conservatism and have the EAL conform to the wording set forth in NEI 99-01 (Revision 4), which was endorsed by NRC in RG 1.101, Revision 4.

The Group 3 EAL J, "Release of Toxic or Flammable Gases Within or Contiguous to a Vital Area Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or Establish or Maintain Safe Shutdown," is being revised to conform to NEI 99-01 (Revision 4), EAL HA3. This EAL is conservative because, as stated by the licensee and discussed above, the EAL initiating condition for release of toxic or flammable gases is reached at a lower initiating level than that set forth in NEI 99-01, Revision 4, which in effect directs the licensee to declare an emergency event sooner than is necessary or required during normal plant operations involving toxic or flammable gases. Because this conservatism is not required by the regulations and requires the licensee to declare events sooner than is necessary, the licensee is seeking relief by requesting a change to conform to the wording set forth in NEI 99-01 (Revision 4), which, as stated above, was endorsed by NRC.

Based on the above discussion, the NRC staff concludes that the proposed changes only remove conservatisms in the existing EALs to adopt EALs that are consistent with NEI 99-01 (Revision 4), which has been endorsed by NRC.

#### 4.0 CONCLUSION

The NRC staff performed a review of the proposed changes to the Callaway EALs described in Reference 1, as supplemented by Reference 2, and determined they are consistent with the guidance of NEI 99-01, Revision 4, which has been endorsed by NRC. As such, the NRC staff concludes that the proposed EAL changes meet the requirements of 10 CFR 50.47(b) and Section IV.B of Appendix E to 10 CFR Part 50 and are, therefore, acceptable.

## 5.0 REFERENCES

1. Letter Number ULNRC-05336 from Union Electric Company to the NRC, "Emergency Preparedness," dated October 3, 2006, licensee's application (ADAMS Accession No. ML062850223).
2. Letter Number ULNRC-05339 from Union Electric Company, "Emergency Preparedness EAL Revision," dated October 24, 2006, response to request for additional information (ADAMS Accession No. ML063050140).
3. Nuclear Utilities Management Council (NUMARC) document, entitled NESP-007, "Methodology for Development of Emergency Action Levels," Revision 2, dated January 1992 (ADAMS Accession No. ML041120174).
4. NEI 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, dated January 2003 (ADAMS Accession No. ML041470143).
5. "Emergency Planning and Preparedness for Nuclear Power Reactors," Regulatory Guide 1.101, Revision 4 (ADAMS Accession No. ML032020276).

Principal Contributor: Don Johnson

Date: November 8, 2006

Callaway Plant, Unit 1

cc:

Professional Nuclear Consulting, Inc.  
19041 Raines Drive  
Derwood, MD 20855

John O'Neill, Esq.  
Pillsbury Winthrop Shaw Pittman LLP  
2300 N. Street, N.W.  
Washington, D.C. 20037

Mr. Keith A. Mills, Supervising Engineer  
Regional Regulatory Affairs/Safety Analysis  
AmerenUE  
P.O. Box 620  
Fulton, MO 65251

U.S. Nuclear Regulatory Commission  
Resident Inspector Office  
8201 NRC Road  
Steedman, MO 65077-1302

Mr. Les H. Kanuckel  
Manager, Quality Assurance  
AmerenUE  
P.O. Box 620  
Fulton, MO 65251

Missouri Public Service Commission  
Governor Office Building  
200 Madison Street  
Jefferson City, MO 65102-0360

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-4005

Mr. H. Floyd Gilzow  
Deputy Director for Policy  
Missouri Department of Natural Resources  
P. O. Box 176  
Jefferson City, MO 65102-0176

Mr. Rick A. Muench  
President and Chief Executive Officer  
Wolf Creek Nuclear Operating Corporation  
P.O. Box 411  
Burlington, KA 66839

Mr. Dan I. Bolef, President  
Kay Drey, Representative  
Board of Directors Coalition for the  
Environment  
6267 Delmar Boulevard  
University City, MO 63130

Mr. Lee Fritz, Presiding Commissioner  
Callaway County Court House  
10 East Fifth Street  
Fulton, MO 65151

Mr. David E. Shafer  
Superintendent, Licensing  
Regulatory Affairs  
AmerenUE  
P.O. Box 66149, MC 470  
St. Louis, MO 63166-6149

Manager, Regulatory Affairs  
AmerenUE  
P.O. Box 620  
Fulton, MO 65251

Mr. Keith G. Henke, Planner  
Division of Community and Public Health  
Office of Emergency Coordination  
930 Wildwood P.O. Box 570  
Jefferson City, MO 65102

Certrec Corporation  
4200 South Hulen, Suite 630  
Fort Worth, TX 76109

Director, Missouri State Emergency  
Management Agency  
P.O. Box 116  
Jefferson City, MO 65102-0116