February 14, 2003

Mr. Garry L. Randolph
Vice President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, MO 65251

SUBJECT: RADIOLOGICAL EMERGENCY RESPONSE PLAN (RERP) CHANGE RELATED TO CONTROL ROOM COMMUNICATORS FOR CALLAWAY PLANT, UNIT 1 (TAC NO. MB5157)

Dear Mr. Randolph:

By letter dated May 6, 2002 (ULNRC-4517), you requested changes to Table 5-1, "Emergency Staffing Requirements On-Shift Emergency Response," and Section 5.1.10 of the Radiological Emergency Response Plan for the Callaway Plant, Unit 1 (Callaway). The proposed change is to remove the equipment operators and assistant equipment operators as control room communicators in the Emergency Response Organization (ERO) for Callaway. The purpose of this RERP change is to eliminate the ERO training of these operators for the emergency task of control room communicator.

Based on the enclosed safety evaluation, it is concluded that the proposed RERP change is consistent with the planning standards of 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. Based on this, the staff concludes that the proposed change is acceptable.

If there are any questions concerning this letter and safety evaluation, please contact me at 301-415-1307, or through the Internet at jnd@nrc.gov.

Sincerely,

/RA/

Jack Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO RADIOLOGICAL EMERGENCY RESPONSE PLAN CHANGE

FOR ON-SHIFT CONTROL ROOM COMMUNICATORS

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letter dated May 6, 2002, Union Electric Company (the licensee) requested changes to Table 5-1, "Emergency Staffing Requirements On-Shift Emergency Response," and Section 5.1.10, "Control Room Communicator," of the Radiological Emergency Response Plan (RERP) for Callaway Plant, Unit 1 (Callaway). The proposed changes are to remove the equipment operators and assistant equipment operators as control room communicators in the Emergency Response Organization (ERO) for Callaway. The licensee stated that the purpose of this RERP change is to eliminate the ERO training of these operators for the emergency task of control room communicator.

There were discussions between the staff and the licensee on the current RERP and the proposed RERP changes. These discussions were conducted in a conference call and an e-mail dated July 22, 2002, between the staff and the licensee (ADAMS Accession No.: ML023440140), which clarified the information submitted in the licensee's letter of May 6, 2002.

2.0 BACKGROUND

In the review of the proposed changes to the RERP, Revision 25 of the RERP dated July 2002 was reviewed by the staff. The following is a description of the RERP and the proposed plan changes based on the review of the application and the RERP, the conference call held with the licensee on July 11, 2002, and the e-mail response to questions to clarify the application dated July 22, 2002.

RERP Table 5-1 identifies the minimum on-shift ERO personnel that are available to respond to radiological emergencies. RERP Table 5-2 provides the desired number of personnel to augment the on-shift ERO personnel, the response time goals for the identified personnel, and the location of these personnel. This is not the minimum required number of personnel for the licensee's capability to augment the on-shift staff for emergencies. RERP Table 5-2 identifies the entire ERO for an emergency. The primary purpose of the table is to satisfy, in part, planning standard 10 CFR 50.47(b)(2). The proposed RERP change would only delete the requirement in RERP Table 5-1 that the equipment operators and assistant equipment

operators would perform the major emergency task of off-site notification/communication coordination.

In the staff's safety evaluation dated March 1, 2001, which evaluated a previous RERP change submitted by the licensee, the staff reviewed the RERP, which has the technical support center (TSC) and the emergency offsite facility (EOF) as the emergency response facilities (ERFs). In that safety evaluation, the staff stated the following about the RERP in terms of RERP Table 5-2 and ERF activation.

> RERP Table 5-2 links the licensee's capability to augment the on-shift staff for emergencies to an emergency classification and identifies the ERF where the augmenting responders will be located. However, the licensee indicates in RERP Section 6.4 that the emergency coordinator can call these personnel as needed without mobilizing the ERFs. Therefore, planning standard 10 CFR 50.47(b)(2) continues to be met.
>
> Upon declaration of an emergency, the shift supervisor becomes the acting emergency coordinator (EC) for the emergency until relieved by the emergency duty officer (EDO, a predesignated senior management representative that may not be on-site). The ERFs are mobilized (i.e., the call-up of augmenting on-shift staff is started) at the Alert (or higher) classification.
>
> ERF activation means that the ERF staff is ready to take over from the control room; however, the EC in the control room may decide to delay this changeover. The EC can transfer the responsibility of emergency functions to the ERFs one function at a time (although the notification and dose assessment functions must go together). The ERFs become operational with the complete changeover of emergency functions and the EC is in the TSC. The staffing for the TSC in RERP Table 5-2 includes the EC in the TSC; however, this position becomes effective only when the responsibility is transferred to the TSC by the EC in the control room.

For the licensee's proposed RERP in its application dated May 6, 2002, the change does not change the identification of personnel and ERFs in RERP Table 5-2, or the process of ERF activation discussed above.

3.0 REGULATORY REQUIREMENTS AND GUIDANCE

The applicable regulations and guidance on the requirements that licensees must meet for emergency plans (EPs) at their plants are the following:

3.1 Regulations

- Section 10 CFR 50.47(b) of 10 CFR 50.47, "Emergency plans," including the following planning standards:
  - 10 CFR 50.47(b)(1) states, in part: "... the emergency responsibilities of the various supporting organizations have been specifically established, and each

principal response organization has staff to respond and to augment its initial response on a continuous basis."

- 10 CFR 50.47(b)(2) states, in part: "...adequate staffing to provide initial facility accident response in key functional areas is maintained at all times; timely augmentation of response capabilities is available; and ..."

- 10 CFR 50.47(b)(8), states: "Adequate emergency facilities and equipment to support the emergency response are provided and maintained."

- Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50 provides requirements on the emergency organization (Section IV.A), assessment of radiological releases (Section IV.B), activation of the emergency organization (Section IV.C), notification procedures (Section IV.D), emergency facilities and equipment (Section IV.E), training (Section IV.F), and maintaining emergency preparedness (Section IV.G).

3.2 Guidance

- Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 2, states, in part:

  "The criteria and recommendations contained in Revision 1 of NUREG-0654/ FEMA-REP-1 are considered by the NRC staff to be acceptable methods for complying with the standards in 10 CFR 50.47 that must be met in on-site and off-site emergency response plans."

- NUREG-0654/FEMA-REP-1, Rev 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," states in part:

  B. Onsite Emergency organization

  "5. Each licensee ... the emergency. These assignments shall cover the emergency functions in Table B-1 entitled "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum on-shift staffing shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1 ..."

  H. Emergency Facilities and Equipment

  "1. Each licensee shall establish a Technical Support Center ... in accordance with NUREG-0696, Revision 1."

  "2. Each licensee shall establish an Emergency Operations Facility ... in accordance with NUREG-0696, Revision 1."

- NUREG-0696, Revision 1, "Functional Criteria for Emergency Response Facilities," states, in part:

  2.3. "Upon activation of the TSC, ... achieve full functional operation within 30 minutes."

  4.3. "Upon EOF activation, ... achieve full functional operation within 1 hour."

- NUREG-0737, Supplement 1, "Clarification of TMI [Three Mile Island] Action Plan Requirements" states, in part:

  8.2.1.a. The TSC will perform EOF functions for the Alert Emergency classification, Site Area Emergency classification, and General Emergency classification until the EOF is functional.

  8.2.1.j. TSC - "... be fully operational within approximately 1 hour after activation."

  8.4.1.j. EOF - "Staffed using Table 2 (previous guidance approved by the Commission) as a goal. Reasonable exceptions to goals for the number of additional staff personnel and response times for their arrival should be justified and will be considered by NRC staff."

In the matter of a licensee making changes to an EP of a nuclear power plant, 10 CFR 50.54(q) states that licensees may change their EPs without Commission approval only if these changes to these plans do not decrease the effectiveness of the plans and the plans, as changed, continue to meet planning standards of Paragraph 50.47 and the requirements of Appendix E to 10 CFR Part 50. The licensee stated that the proposed increase in the response time goals could technically be considered a decrease in effectiveness in the current commitments in the RERP and requested that the staff review the proposed changes to the RERP.

4.0 TECHNICAL EVALUATION

In its application, the licensee proposed to change the RERP by deleting the following:

1. The phrase "Equipment Operators, Assistant Equipment Operators" from RERP Section 5.1.10; and

2. The phrase "Off site Notification/Communications coordination" from the column on major tasks in RERP Table 5-1 for the emergency position of equipment operators and assistance equipment operators.

4.1 Description and Evaluation of Proposed RERP Change

The proposed change would eliminate equipment operators and assistant equipment operators as control room communicators during the initial period of the emergency when the on-shift emergency staff identified in RERP Table 5-1 are in charge and the ERFs have not been activated. Once the ERFs are activated, the control room communicator task is transferred to the TSC and EOF communicators, and the control room communicators would revert to their regular job.

The licensee is proposing to change the staffing to provide initial facility accident response in the key RERP function area of timely notifications to offsite authorities and agencies, as required by 10 CFR 50.47(b)(2). No other aspect of timely notifications is proposed to be changed by the licensee. The notification procedures required by Appendix E, Section IV.D, are not being changed by the proposed RERP change.

As stated in RERP Section 5.1.10, the duties of the control room communicators are to initiate notifications and maintain communications of off-site authorities and others as directed by the Shift Supervisor. The licensee explained that notifications are now performed by a computerized system that significantly reduces the time needed to prepare and send notifications. The licensee stated that this system uses a preformatted form that is completed on the computer screen and transmitted by e-mail simultaneously to the appropriate off-site authorities. The licensee stated that the primary control room communicators are the two on-shift instrumentation and control (I&C) technicians listed in RERP Table 5-1.

The licensee provided several reasons in its application to justify the RERP change. The licensee stated that the proposed RERP change recognizes the conflict in availability of the equipment operators and assistant equipment operators, in the initial phases of an emergency, to perform the tasks of control room communicators and of auxiliary plant operations (i.e., performing in-plant mitigating tasks), which is also a major emergency task for these operators in RERP Table 5-1. In addition, the licensee stated that the equipment operators and assistant equipment operators have never been needed for backup of the I&C technicians during unannounced off-hour drills.

The licensee went on to state that if the I&C technicians could not respond promptly, one of the senior reactor operators (Shift Supervisor or Operating Supervisors) would be tasked with temporarily performing the control room communicator task. This task is not considered an additional burden on control room management because they are already tasked with providing this information to a control room communicator and approving it prior to it being sent and, the licensee added, that the additional work for the senior reactor operators would be that of completing the form which, on the computerized system, would have little time impact. The licensee further stated that the on-shift Shift Supervisor or Operating Supervisors are trained on the control room communicator duties and equipment, and there would be no change in normal and ERO staffing levels as a result of the proposed RERP change.

Therefore, the proposed RERP change only affects the use of the equipment operators and assistant equipment operators as backup to the two on-shift I&C technicians for the control room off-site notification/communications coordination

The licensee concluded in its application that the proposed RERP change should be considered an improvement to the ERO because the change will require fewer personnel to be trained and, thereby, would improve the proficiency and participation by trained personnel in the ERO. By eliminating the equipment operators and assistant equipment operators from the trained communicator pool, the licensee expects to increase the proficiency and participation opportunities of the I&C technicians. However, the licensee also stated in its application that the RERP change could be interpreted as a reduction in effectiveness of the RERP and, pursuant to 10 CFR 50.54(q), requested NRC approval of the proposed RERP change.

4.2 Previous NRC Inspections

There have been NRC inspections, in the past 50 months, of this on-shift organization in emergency response simulations that are documented in inspection reports (IRs) issued by the NRC staff. These IRs are discussed below:

- IR 50-483/98-14 dated July 17, 1998: Inspection walkthroughs were conducted with two control room crews using a dynamic simulation on the control room simulator. Each walkthrough lasted approximately 2 hours. During the scenarios, each crew was evaluated on the ability to evaluate plant conditions, identify emergency action levels, classify the emergency, make timely notifications to offsite agencies, evaluate radiation information and perform dose assessments, and recommend appropriate protective actions. The crew performance was considered generally good. Both crews effectively performed communications, protective action recommendations, and dose assessments. The only deficiency identified was a delayed classification that was identified as a performance weakness. It was also stated that the licensee's ability to meet emergency plan augmentation goals has been a recurring problem.

- IR 50-483/98-23 dated October 28, 1998: The inspection was of an unannounced off-hours exercise that involved one control room crew and lasted almost three hours. During the exercise, the crew was evaluated on the ability to evaluate plant conditions, identify emergency action levels, classify the emergency, make timely notifications to offsite agencies, evaluate radiation information and perform dose assessments, and recommend appropriate protective actions. The only performance weakness identified was the use of an existing default release duration time. The licensee issued a Suggestion Occurrence Solution to evaluate the default values used in dose projections.

- IR 50-483/99-10 dated October 14, 1999: The inspection was held on September 13-16, 1999, to review RERP implementation and procedures during the biennial emergency preparedness exercise. The conclusions reported in the IR included that the control room staff's performance was very good and that accident detection, classification, and notification were exceptionally prompt and accurate. Also, the staff concluded that the post exercise critiques were thorough, open, and self-critical and that the licensee identified good suggestions for improvement. The final conclusions by the inspection included the statements that notifications were conducted quickly and clearly using the computer-based system and that communications with offsite officials occurred frequently, with no mention of any problems.

- IR 50-483/2000-04 dated February 10, 2000: Inspection walkthroughs were conducted with two control room crews using a dynamic simulation on the control room simulator. Each walkthrough lasted approximately two hours and was followed by a licensee critique. During the scenarios, each crew was evaluated on their ability to evaluate plant conditions, identify emergency action levels, classify the emergency, make timely notifications to offsite agencies, evaluate radiation information and perform dose assessments, and recommend appropriate protective actions. The only significant weaknesses identified were (1) a protective action recommendation was transmitted that was not approved by the shift supervisor, and (2) a second protective action recommendation was communicated to a single county, but not to all offsite authorities.

The crew performance was characterized as weak by the licensee and a Suggestion Occurrence Solution was initiated by the licensee to evaluate corrective actions.

- IR 50-483/2000-16 dated January 10, 2001: The IR reported the results of inspections of documents in the cornerstone of emergency preparedness, but none of the inspections involved control room notifications.

- IR 50-483/2001-02 dated April 20, 2001: The inspectors observed simulator exercises conducted on January 12 and February 22, 2001. The purpose of these observations was to evaluate operator performance, licensee event classification, notification of state and local authorities, and adequacy of protective action recommendations. The inspectors also reviewed the licensee's critiques of the exercises on the two days to determine if they were self-critical in the identification of strength and performance issues. The inspectors' conclusion was that there were no findings of significance identified.

- IR 50-483/2001-06 dated January 16, 2002: The inspectors evaluated the licensee's performance in the 2001 exercise in the emergency activities of classification, notification, protective action recommendation, and assessment of offsite dose consequences in the following emergency response facilities: simulator control room, technical support center, operations support area, and emergency operations facility. There were no findings of significance.

- IR 50-483/2002-05 dated October 15, 2002, Emergency Preparedness Cornerstone: A drill evaluation was conducted where the inspections observed drills from the technical support center and plant simulator and evaluated the adequacy of the licensee's drill conduct and the subsequent critiques of drill performance. The inspectors also evaluated personnel performance, licensee event classification, notification of state and local authorities, and the adequacy of protection action recommendations. The inspectors also reviewed the licensee's corrective action program to determine the licensee's ability to identify and correct problems in accordance with the requirements of 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E. There were no findings of significance.

The above eight IRs indicate that the key functional tasks of evaluating plant conditions, emergency classification, declaration, notification, dose assessment, and protective action recommendations can be performed with the existing on-shift emergency staff. In addition, the licensee has more on-shift ERO personnel than is indicated in Table B-1 of NUREG-0654 and the RERP allows the EC to call in any additional ERO personnel that are needed without initiating the mobilization of the ERFs. There is also an effective mechanism (the self-critiques following drills and exercises) for the licensee to correct deficiencies identified in exercising of the ERO, and inspections have not identified any significant weaknesses in this process for emergency preparedness.

4.4 Conclusion

Because of the following:

- The primary control room communicators are the two on-shift I&C technicians.

- The equipment operators and assistant equipment operators have never been needed for backup of the I&C technicians during unannounced off-hour drills.

- The two senior reactor operators (Shift Supervisor or Operating Supervisors) that may be tasked with temporarily performing the control room communicator task are trained for the control room notification/communication duties and equipment.

- This task is not considered an additional burden on control room management because they are already tasked with providing this information to a control room communicator and approving it prior to it being sent and the additional work for the senior reactor operators would be that of completing the form which, on the computerized system significantly reduces the time needed to prepare and send notifications.

- NRC inspections in the past 50 months have not identified problems in the timely notifications by the licensee's ERO staff to offsite authorities and agencies.

- The RERP allows the EC to call in any additional ERO personnel that are needed without initiating the mobilization of the ERFs.

The staff concludes that the proposed RERP change meets the 10 CFR 50.47(b)(2) planning standard requirement that the licensee must provide adequate staff for the initial facility accident response in the key functional area of timely notification of offsite authorities and agencies. No other key functional areas are being changed by the proposed RERP change. Therefore, because this is the only change to the RERP, the staff concludes that the RERP continues to meet the 10 CFR 50.47(b)(2) planning standard requirement, and is consistent with the planning standards of 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. Based on this, the staff concludes that the proposed RERP change is acceptable.

It should be noted that if any deficiency is identified in an RERP drill, such as a problem in the control room communicator task, by the licensee or by an NRC inspection involving the control room communication task, the licensee would identify the deficiency in its self-critique process and correct that deficiency in its corrective actions program. It should also be noted that, based on the IRs discussed above on emergency preparedness findings, the emergency preparedness inspections have not identified any weaknesses in the licensee's self-critique process to identify weaknesses or the corrective actions program to correct weaknesses, in the RERP.

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Date: February 14, 2003

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