



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064**

December 29, 2000

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

**SUBJECT: CALLAWAY INITIAL EXAMINATION REPORT NO. 50-483/00-302**

Dear Mr. Randolph:

On December 21, 2000, the NRC completed initial examinations at your Callaway Plant. The enclosed report documents the examination results, which were discussed with Mr. Warren Witt, Plant Manager, and other members of your staff on December 21, 2000.

The examination included the evaluation of four applicants for reactor operator license and two applicants for senior operator licenses. We determined that three applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued for two reactor operator and one senior operator applicants. The remaining three applicants satisfied all 10 CFR Part 55 requirements except experience as discussed in letters to them dated November 22, 2000. These licenses will be held in abeyance until an authorized facility representative has certified completion of experience requirements as discussed in the individual letters.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

John L. Pellet, Chief  
Operations Branch  
Division of Reactor Safety

Docket No.: 50-483  
License No.: NPF-30

Union Electric Company

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Enclosure:  
NRC Inspection Report No.  
50-483/00-302

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 50-483  
License No.: NPF-30  
Report No.: 50-483/00-302  
Licensee: Union Electric Company  
Facility: Callaway Plant  
Location: Junction Highway CC and Highway O  
Fulton, Missouri  
Dates: December 18-21, 2000  
Examiners: H. Bundy, Senior Operations Engineer, Operations Branch  
P. Gage, Senior Operations Engineer, Operations Branch  
Accompanied by: G. Werner, Operations Branch  
D. Muller, Operator Licensing and Human Performance Branch  
Office of Nuclear Reactor Regulation  
Approved By: John L. Pellet, Chief  
Operations Branch  
Division of Reactor Safety

ATTACHMENTS: 1. Supplemental Information  
2. NRC's Revised Reactor Oversight Process

## SUMMARY OF FINDINGS

Callaway Plant  
NRC Inspection Report No. 50-483/00-302

IR 05000483-00-302; on 12/18-21/2000; Union Electric Company; Callaway Initial Licensed Operator Examinations.

NRC examiners evaluated the competency of four applicants for four reactor operator licenses and two applicants for senior operator licenses at the Callaway. The facility developed the written and operating examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8. The written examinations were administered to all applicants on November 20, 2000, by facility proctors in accordance with instructions provided by the chief examiner. The NRC examiners administered the operating tests on December 18-21, 2000.

### **Cross-Cutting Issues: Human Performance**

- No findings of significance were identified.

## Report Details

### 4. OTHER ACTIVITIES

#### 4OA4 Initial License Examinations

##### .1 Operator Knowledge and Performance

###### a. Inspection Scope

The NRC examination team administered the various portions of the operating examination to the six applicants on December 18-21, 2000. The reactor operator and instant senior operator applicants participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of ten system tasks, and an administrative test consisting of four administrative tasks and two prescribed questions. The applicant that was upgrading from a reactor operator license to a senior operator license participated in one dynamic simulator scenario, a control room and facilities walkthrough test consisting of five system tasks, and the same administrative test given the instant senior operator applicant.

On November 30, 2000, the licensee proctored the administration of the written examination to all six applicants. The licensee's staff graded the written examinations and presented the results to the NRC on December 11, 2000.

###### b. Findings

All applicants passed all parts of the examinations. For the written examinations, the average score for reactor operator applicants was 84.5 percent, and the average score for senior operator applicants was 89 percent. The reactor operator scores ranged from 80 to 88 percent, and the senior operator scores ranged from 87 to 91 percent.

For Question 60 on the reactor operator examination (Question 65 on the senior operator examination), the proctors, with the concurrence of the chief examiner, changed the answer and one distractor during the examination to reflect a recent procedure change. The licensee conducted a performance analysis for the written examinations with emphasis on 16 questions missed by half or more of the applicable applicants. This analysis is located in the ADAMS system under Accession No. ML003781216. The licensee concluded that all questions were valid and that there were no commonalities in the knowledge deficiencies. The chief examiner reviewed the licensee's analysis and applicant performance and found the conclusions to be technically valid. The text of the examination questions may be accessed in the ADAMS system under Accession No. ML003781211.

##### .2 Initial Licensing Examination Development

The licensee developed the written and operating examinations in accordance with NUREG-1021, Revision 8, using facility training and operations staff on the security agreement.

.2.1 Operating Examination Outline and Examination Package

a. Inspection Scope

The facility licensee submitted the written and operating examination outlines on September 5, 2000. An examiner reviewed the submittal against the requirements of NUREG-1021, Revision 8, and the chief examiner forwarded minor comments to the licensee on September 6, 2000. The facility licensee submitted the draft examination package on September 29, 2000. Examiners reviewed the draft submittals against the requirements of NUREG-1021, Revision 8, and provided comments to the licensee on October 12, 2000. The chief examiner conducted an onsite validation of the examinations and provided further comments during the week of November 13, 2000. The licensee satisfactorily completed comment resolution during the onsite validation week.

b. Findings

The chief examiner approved the initial examination outline with minor comments and advised the licensee to proceed with the operating examination development.

The chief examiner determined that the written and operating examinations initially submitted by the licensee were within the range of acceptability expected for a proposed examination and were satisfactory.

No findings were identified.

.2.2 Simulation Facility Performance

a. Scope

The examination team observed simulator performance with regard to plant fidelity during the examination validation and administration.

b. Findings

No findings were identified.

.2.3 Examination Security

a. Scope

The examiners reviewed examination security both during the onsite preparation week and examination administration week with respect to NUREG-1021 requirements. Written plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings were identified.

4OA5 Management Meetings

Exit Meeting Summary

The examination team presented the examination results to Mr. Warren Witt, Plant Manager, and other members of the licensee's management staff at the conclusion of the examinations on December 21, 2000. The licensee acknowledged the findings presented.

The licensee did not identify as proprietary any information or materials examined during the examination.

**ATTACHMENT 1**

**SUPPLEMENTAL INFORMATION**

**PARTIAL LIST OF PERSONS CONTACTED**

**Licensee**

S. Aufdemberge, Operations Training  
S. Halverson, Simulator Supervisor  
J. Laux, Manager, Quality Assurance  
B. Moody, Control Room Supervisor, Operations Training  
R. Neil, Shift Supervisor, Operations Training  
D. Neterer, Assistant Superintendent, Operations  
S. Putthoff, Control Room Supervisor, Operations Training  
E. Stewart, Control Room Supervisor, Operations Training  
W. Witt, Plant Manager

**NRC**

J. Hanna, Resident Inspector

**ADAMS DOCUMENTS REFERENCED**

CW - INIT EXAM - 12-2000 -Final Reference Exam, Accession No. ML003718287

CW - INIT EXAM - 12-2000 - Licensee Exam Performance Analysis,  
Accession No. ML003781216

## ATTACHMENT 2

### NRC'S REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

<b>Reactor Safety</b>	<b>Radiation Safety</b>	<b>Safeguards</b>
<ul style="list-style-type: none"><li>•Initiating Events</li><li>•Mitigating Systems</li><li>•Barrier Integrity</li><li>•Emergency Preparedness</li></ul>	<ul style="list-style-type: none"><li>•Occupational</li><li>•Public</li></ul>	<ul style="list-style-type: none"><li>•Physical Protection</li></ul>

To monitor these seven cornerstones of safety, the NRC used two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plan, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.