



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

July 24, 2000

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

SUBJECT: NRC'S CALLAWAY PLANT INITIAL EXAMINATION INSPECTION REPORT  
NO. 50-483/2000-301

Dear Mr. Randolph:

On July 13, 2000, the NRC completed initial examinations at the Callaway Plant facility. The enclosed report presents the results of this inspection. The results of this inspection were discussed on July 14, 2000, with Mr. Ron Affolter, Manager, Operations, and other members of your facility.

The inspection included an evaluation of two applicants for reactor operator licenses and five applicants for senior operator licenses. We determined that all applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be 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).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

*/RA/*

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

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

Union Electric Company

-2-

Enclosure:  
NRC Inspection Report No.  
50-483/00-301

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-3-

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 50-483  
License No.: NPF-30  
Report No.: 50-483/2000-301  
Licensee: Union Electric Company  
Facility: Callaway Plant  
Location: Junction Highway CC and Highway O  
Fulton, Missouri  
Dates: July 10 to 14, 2000  
Inspectors: Howard F. Bundy, Chief Examiner, Operations Branch  
Thomas O. McKernon, Senior Operations Engineer, Operations Branch  
Michael E. Murphy, Senior Operations Engineer, Operations Branch  
Approved By: John L. Pellet, Chief, Operations Branch  
Division of Reactor Safety

**ATTACHMENTS:**

Attachment 1: Supplemental Information  
Attachment 2: NRC's Revised Oversight Process

EXECUTIVE SUMMARY

Callaway Plant  
NRC Inspection Report No. 50-483/00-301

NRC examiners evaluated the competency of two applicants for reactor operator licenses and five applicants for senior operator licenses at the Callaway Plant facility. 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 June 30, 2000, by facility proctors in accordance with instructions provided by the chief examiner. The NRC examiners administered the operating tests on July 10 to 13, 2000.

Cross-cutting Issues: Human Performance

- No findings were identified.

## Report Details

### Summary of Plant Status

The plant operated at essentially full power for the duration of this inspection.

## **4. OTHER ACTIVITIES**

### 4OA4 Initial License Examinations

#### .1 Operator Knowledge and Performance

##### a. Inspection Scope

On June 30, 2000, the licensee proctored the administration of the written examination to all seven applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on July 3, 2000.

The examination team administered the various portions of the operating examination to the seven applicants on July 10 to 13, 2000. Each applicant, except one applicant for upgrading a reactor operator license to a senior operator license, participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 10 system tasks, and an administrative test consisting of 5 administrative tasks. In addition to the administrative test, the senior operator upgrade participant participated in one dynamic simulator scenario and received a control room and facilities walkthrough test, which consisted of 5 system tasks.

##### b. Findings

All applicants passed all parts of the examinations. The applicants demonstrated good 3-way communications, alarm response, and peer checking. For the written examinations, the average score for reactor operator applicants was 93.5 and the average score for senior operator applicants was 90.4. The reactor operator scores ranged from 93 to 94 and senior operator scores ranged from 84 to 95.

The licensee conducted a performance analysis for the written examinations with emphasis on nine questions missed by half or more of the applicable applicants. This analysis is located in the ADAMS system under Accession No. ML003733368. 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.

#### .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 Examination Outline and Examination Package

a. Inspection Scope

The facility licensee submitted the written and operating examination outlines on February 16, 2000. The chief examiner reviewed the submittal against the requirements of NUREG-1021, Revision 8, and advised the licensee that he had no comments on February 28, 2000. The facility licensee submitted the draft written examination package on March 30, 2000, and the draft operating examination package on April 20, 2000. Examiners reviewed the draft submittals against the requirements of NUREG-1021, Revision 8, and provided comments to the licensee on the written examination on April 13, 2000, and on the operating examination on May 3, 2000. The chief examiner conducted an onsite validation of the operating examinations and provided further comments during the week of May 29, 2000. The licensee satisfactorily completed comment resolution on June 2, 2000.

b. Findings

Region IV approved the initial examination outline without comment and advised the licensee to proceed with the operating examination development.

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

No findings were identified.

.3 Simulation Facility Performance

a. Inspection Scope

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

b. Findings

No findings were identified.

.4 Examination Security

a. Scope

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

b. Observations and Findings

No findings were identified.

40A5 Management Meetings

.1 Exit Meeting Summary

The examiners presented the inspection results to Mr. Ron Affolter, Plant Manager, and other members of the licensee management at the conclusion of the inspection on July 14, 2000. The licensee acknowledged the findings presented.

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

**ATTACHMENT 1**

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Lantz, Operating Supervisor for Training  
R. Moody, Operating Supervisor for Training  
D. Neil, Shift Supervisor, Operations Training  
D. Neterer, Assistant Superintendent - Operations  
K. Schoolcraft, Senior Engineer, Regulatory Support  
E. Stewart, Operating Supervisor for Training

NRC

V. Gaddy, Senior Resident Inspector

ADAMS DOCUMENTS REFERENCED

Accession No.:

ML003733557	Final Reference Exam
ML003733368	Licensee Post-exam Analysis

## ATTACHMENT 2

### **NRC's REVISED REACTOR OVERSIGHT PROCESS**

The federal Nuclear Regulatory Commission (NRC) recently 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 and assessing 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 uses 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 plant, as described in the Action Matrix.

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