



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
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ARLINGTON, TEXAS 76011-4005

July 1, 2003

Clay C. Warren, Vice President of  
Nuclear Energy  
Nebraska Public Power District  
P.O. Box 98  
Brownville, Nebraska 68321

SUBJECT: COOPER NUCLEAR STATION - NRC EXAMINATION REPORT 50-298/03-301

Dear Mr. Warren:

On June 20, the NRC completed an examination at your Cooper Nuclear Station. The enclosed report documents the examination findings, which were discussed on June 20, 2003, with Mr. Michael Coyle and other members of your staff.

The examination included the evaluation of three 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 will be deferred until Cooper Nuclear Station has implemented Revision 2 of the Emergency Procedure Guidelines and Severe Accident Guidelines.

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/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Anthony T. Gody, Chief  
Operations Branch  
Division of Reactor Safety

Docket: 50-298  
License: DPR-46

Nebraska Public Power District

-2-

Enclosure:  
NRC Examination Report  
50-298/03-301

cc w/enclosure:  
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-3-

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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket: 50-298  
License: DPR-46  
Report No.: 50-298/03-301  
Licensee: Nebraska Public Power District  
Facility: Cooper Nuclear Station  
Location: P.O. Box 98  
Brownville, Nebraska  
Dates: June 16-20, 2003  
Examiners: G. Werner, Senior Operations Engineer, Operations Branch  
H. Bundy, Senior Operations Engineer, Operations Branch  
A. Sanchez, Resident Inspector, Projects Branch A  
Accompanying Personnel: K. Clayton, Operations Engineer, Operations Branch  
Approved By: Anthony T. Gody, Chief  
Operations Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

ER 50-298/03-301; 6/16-20/03; Nebraska Public Power District; Cooper Nuclear Station; Initial Operator Licensing Examinations.

NRC examiners evaluated the competency of three applicants for reactor operator licenses and five applicants for senior operator licenses at Cooper Nuclear Station. The licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1. The written examination was administered by the facility to the applicants on June 13, 2003. The NRC examiners administered the operating tests on June 16-20, 2003.

### **Cornerstone: Human Performance**

No findings of significance were identified (Section 40A4.1).

## Report Details

### 4. OTHER ACTIVITIES (OA)

#### 4OA4 Initial Operator License Examination

##### .1 Operator Knowledge and Performance

###### a. Examination Scope

On June 13, 2003, the licensee proctored the administration of the written examination to all eight applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on June 23, 2003.

The NRC examination team administered the various portions of the operating examination to the applicants on June 16-20, 2003. The upgrade senior operators participated in one simulator scenario while the instant senior operators participated in three simulator scenarios. The reactor operators participated in two simulator scenarios. The three applicants for reactor operator and the three applicants for senior operator (Instant) participated in a control room and facilities walkthrough test consisting of ten system tasks, and an administrative test consisting of five administrative tasks. The two applicants for upgrade to senior operator participated in a control room and facilities walkthrough test consisting of five system tasks, and an administrative test consisting of five administrative tasks.

###### b. Findings

All eight of the applicants passed all parts of the examinations. The applicants demonstrated good 3-way communications, alarm response, and peer checking. For the written examinations, the reactor operator applicants average score was 87 percent and ranged from 84 to 90 percent, the senior reactor operator applicants average score was 82 percent and ranged from 81 to 83 percent. The overall written examination average was 84 percent. The text of the examination questions may be accessed in the ADAMS system under the accession numbers noted in the attachment.

In accordance with NUREG 1021, "Operator Licensing Examination Standard for Power Reactors," Revision 8, Supplement 1, Section ES-501, Step D.2.c., the chief examiner independently graded two borderline written examinations. The chief examiner determined that licensee properly graded the examinations.

The licensee conducted a performance analysis for the written examinations, submitting them to the chief examiner on June 23, 2003. For the combined examination questions, eight questions were missed by 50 percent or more of the applicants. For reactor operator questions only, five questions were missed by 50 percent or more of the candidates. For senior operator questions only, seven questions were missed by 50 percent or more of the candidates. The analysis identified no common knowledge deficiency. The licensee discussed these missed questions during the post-examination review and initiated notification forms for the missed questions. The licensee also submitted post examination comments on two questions, and requested that two

answers be accepted as correct. The licensee's rationale and the NRC resolution are contained in the attachment.

No findings of significance were identified.

.2 Initial Licensing Examination Development

The licensee developed the examinations in accordance with NUREG-1021, Revision 8, Supplement 1. Licensee facility training and operations staff involved in examination development were on a security agreement.

.2.1 Examination Outline and Examination Package

a. Examination Scope

The facility licensee submitted the operating examination outlines on February 3, 2003. Examiners reviewed the submittal against the requirements of NUREG-1021, Revision 8, Supplement 1. There were comments associated with the written outline concerning over sampling of several systems. The facility licensee submitted the draft examination package on April 17, 2003. Examiners reviewed the draft submittals against the requirements of NUREG-1021, Revision 8, Supplement 1, and provided comments to the licensee on May 8, 2003. The chief examiner conducted an onsite validation of the examinations and provided further comments during the week of May 26, 2003. The licensee satisfactorily completed comment resolution on June 2, 2003.

b. Findings

Examiners approved the initial examination outline and advised the licensee to proceed with the operating examination development.

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

No findings of significance were identified.

.3 Simulation Facility Performance

a. Examination Scope

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

b. Findings

No findings of significance were identified.



.4 Examination Security

a. Examination Scope

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

b. Findings

No findings of significance were identified.

4OA5 Management Meeting

.1 Exit Meetings

The chief examiner presented the examination results to Mr. Michael Coyle, Site Vice President, and other members of the licensee's management staff on June 20, 2003. The licensee acknowledged the findings presented.

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

## ATTACHMENT

### KEY POINTS OF CONTACT

#### Licensee

L. Edwards, Manager, Training  
H. McDaniel, Instructor, Operations Training  
D. Olesen, Instructor, Operations Training  
D. VanDerKamp, Operations Support Specialist, Licensing

#### ADAMS DOCUMENTS REFERENCED

Accession No. ML031780414: Written examination for reactor and senior reactor operators

#### POST EXAMINATION COMMENT

##### Question #13

Comment: The question asks for the Train A core spray system pressure response following an event with a valid actuation signal present. The Train A core spray system was operating in the full flow test mode at the time of the event. The facility recommends accepting an additional answer - increases to pump shutoff head. The design of the system is such that the test flow valve is relatively fast acting (approximately 5 seconds to close) and the minimum flow valve is slow acting (approximately 29 seconds to fully open). This would allow the core spray pump to be dead headed or pressurized to shutoff head for a few seconds.

NRC Resolution: Recommendation accepted; the question has two correct answers (b and d). A review of the inservice testing data for the minimum flow valve show travel time for full open or full closed at approximately 29 seconds. The test valve is not in the inservice testing program and the licensee performed a calculation showing a stroke time of approximately 5 seconds. This event was run on the simulator and the pump discharge pressure momentarily rose to pump shutoff head.

##### Question #21

Comment: Given a set of initial conditions (including a loss of off-site power with no operator action), the question asks for the status of the Low Low Set (LLS) and the reason. The facility recommends accepting an additional answer - LLS is controlling pressure. LLS logic has no AC powered inputs or components. The design of the electrical system is such that when off-site power is lost, the emergency buses will be deenergized for approximately 10 seconds. During this 10 second time frame, the reactor protection system motor generator sets will trip on undervoltage. The motor generator sets do not get restarted as part of the diesel generator load sequencer. Therefore, there is no AC power supplying the reactor protection system and at this time, LLS has no AC powered inputs or components.

NRC Resolution: Recommendation accepted; the question has two correct answers (a and b). A review of Schematics 944E689 and 791E256 show that Relay 5A-K27A/B, which provides the high reactor pressure input signal to the LLS logic, being powered from 120V 60hz power supply from the reactor protection system.