



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

**REGION II  
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ATLANTA, GEORGIA 30303-8931**

June 7, 2001

Duke Energy Corporation  
ATTN: Mr. G. R. Peterson  
Site Vice President  
Catawba Site  
4800 Concord Road  
York, SC 29745-9635

SUBJECT: CATAWBA NUCLEAR STATION - NRC EXAMINATION REPORT  
50-413/2001-301 AND 50-414/2001-301

Dear Mr. Peterson:

On April 20, 2001, the Nuclear Regulatory Commission (NRC) completed administration of operating examinations to employees of your company who had applied for licenses to operate the Catawba Nuclear Station Units 1 and 2. The enclosed report documents the examination results and findings which were discussed on April 20, 2001, with Mr. R. Jones and other members of your staff.

Six Reactor Operator and eight Senior Reactor Operator applicants passed both the written and operating examinations. One Senior Reactor Operator applicant failed both the written and operating examinations. NRC's resolution to your facility's post-examination comments is included in this report as Enclosure 2.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures 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/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Michael E. Ernstes, Chief  
Operator Licensing and  
Human Performance Branch  
Division of Reactor Safety

Docket Nos.: 50-413, 50-414  
License Nos.: NPF-35, NPF-52

Enclosures: (See page 2)

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Enclosures: 1. Examination Report 50-413/2001-301, 50-414/2001-301  
2. NRC Resolution of Facility Post-examination Comments

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NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-413 and 50-414

License Nos.: NPF-35 and NPF-52

Report Nos.: 50-413/2001-301 and 50-414/2001-301

Licensee: Duke Energy Corporation (DEC)

Facility: Catawba Nuclear Station, Units 1 & 2

Location: 4830 Concord Road  
York, SC 29745

Dates: Operating Tests - April 2 - 6 and April 16 - 20, 2001  
Written Examination - April 24, 2001

Examiners: C. Payne, Chief License Examiner  
R. Aiello, License Examiner  
G. Salyers, License Examiner

Approved by: M. Ernstes, Chief  
Operator Licensing and Human Performance Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

ER 05000413-01-301, ER 05000414-01-301, on 4/2-24/2001, Duke Energy Corporation, Catawba Nuclear Station, Units 1 & 2.

The operator licensing initial examinations were developed by the Catawba training staff and administered by NRC examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1. The examination implemented the operator licensing requirements of 10 CFR §55.41, §55.43, and §55.45.

Six Reactor Operator (RO) applicants and nine Senior Reactor Operator (SRO) applicants were administered written examinations and operating tests. One SRO applicant failed written examination and the administrative portion of the operating test. All other applicants passed the examination and were issued operator licenses commensurate with the level of examination administered.

No significant findings were identified

## Report Details

### 4. OTHER ACTIVITIES (OA)

#### **4OA5** Operator Licensing Initial Examinations

##### a. Scope

Operating tests and written examinations were developed by the Catawba training staff, adhering to examination security requirements, in accordance with NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, Supplement 1. The draft examinations were transmitted to the NRC for review, validation and comment. Examination changes agreed upon between the NRC and the licensee were made according to NUREG-1021 and incorporated into the final version of the examination materials. The NRC administered the approved operating tests during the periods of April 2 - 6 and April 16 - 20, 2001 to six RO applicants and nine SRO applicants. The licensee staff administered the approved written examination on April 24, 2001. The examiners reviewed the examination security measures to ensure examination security and integrity.

##### b. Issues and Findings

No findings of significance were identified.

Six RO and eight SRO applicants passed both examinations and were issued operator licenses commensurate with the level of examination administered. One SRO applicant failed the written examination and the administrative portion of the operating test. Details of each applicant's deficiencies are described in the individual's examination report, Form ES-303-1, "Operator Licensing Examination Report." Copies of these evaluations were forwarded under separate cover to the Training Manager to allow evaluation of noted deficiencies so appropriate remedial training may be provided, as necessary.

The licensee was provided a copy of the as-given written examinations (ADAMS Accession Number ML011550580.) The licensee submitted one written and four operating test post examination comments (ADAMS Accession Number ML011520181.) NRC's resolution of these comments is provided in Enclosure 2.

#### **4OA6** Meetings

##### Exit Meeting Summary

The Chief Examiner presented the preliminary examination results on April 20, 2001, to members of licensee management. The licensee acknowledged the examination results presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

LIST OF PERSONS CONTACTED

M. Glover, Operations Superintendent  
G. Hamilton, Operations Shift Manager  
R. Jones, Station Manager  
B. Pitesa, Operations Training Manager  
G. Strickland, Regulatory Compliance  
J. Suptela, Supervisor Nuclear Operations Training

## NRC RESOLUTION OF FACILITY POST-EXAMINATION COMMENTS

### Written Examination

#### SRO Question #80

Comment Summary: The question asked the SRO applicants to determine the correct course of action if, during a reactor startup in Mode 1, two battery chargers were inoperable at the same time. The initial conditions postulated one failed battery charger had already been replaced with the Spare Battery Charger. The question then provided that another battery charger had a faulted breaker. The applicant was asked to choose the proper operator response to this situation. The expected response (answer B) was for the applicant to choose to crosstie the bus that had been aligned to the battery charger with the faulted breaker to a second, same train bus that was being supplied by an operable battery charger. Using this method, Technical Specifications allows operation in this manner for 10 days while making repairs to the failed battery charger. However, after the examination was administered, it was determined that while Technical Specifications allow crosstie of the buses in this manner, no approved Operating Procedure existed to direct the operators in the performance of this task. Consequently, some applicants answered this question based strictly on TS interpretation (answer B) while others answered it based on their understanding of procedure usage and TS interpretation (answer A.) No guidance was provided in the question to answer solely based on TS interpretation (as intended by the examination author.) Recommend accepting both answers A and B as correct for the question.

NRC Resolution: Recommendation accepted. The intent of this question was for the applicant to answer solely based on TS interpretation for the given plant conditions (references were provided to this end.) NRC agrees that the question was not clear as to that intention. A knowledgeable applicant, very familiar with the battery charger operating procedure (OP/1/A/6350/008, "125 VDC/120 VAC Vital Instrument and Control Power System"), could be aware of the lack of an approved operating procedure allowing the actions permitted by TS. NRC believes an applicant should not be penalized for using correct knowledge, above and beyond that intended for the question, but is properly applied to the situation presented by the initial conditions and allowed by the question stem. Both answers A and B were accepted as correct.

### Operating Test

#### Administrative JPM RO-1 and SRO-1

Comment Summary: This administrative JPM involved review of semi-daily surveillance items to ensure compliance with Technical Specifications and performance of the required actions for a procedure discrepancy that should be identified during the review. The licensee noted that conflicting guidance in OMP 1-4, "Use of Procedures," could lead to several different answers by the applicants. This conflict was identified and documented on December 22, 2000 (PIP C-0006434.) However, resolution of the issue and revision of the procedure did not occur until after the freeze date of the examination reference materials. As a result, the licensee recommended three possible correct actions to be taken with regard to completing procedure



PT/1/A/4600/02A, "Mode 1 Periodic Surveillance Items", once the out of tolerance item was found.

NRC Resolution: Recommendation accepted. The licensee provided supporting information that documented that the issue had been previously identified but not resolved until after the examination reference material freeze date. Each of the three recommended "correct" responses was consistent and compliant with the administrative procedures in effect when the examinations were being administered. Because slightly different outcomes were possible with each of the three responses, the NRC examiners required the applicant's overall performance of the task to be consistent with the outcome selected.

#### Administrative JPM RO-3 and SRO-3

Comment Summary: This administrative JPM involved the development/review of a tagout (R&R) to isolate the 1A KF pump. The answer key had the sequence of tagging the discharge isolation valve prior to the suction isolation valve as a critical step. It is good [engineering] practice to close the discharge valve prior to the suction valve to preclude inadvertent over-pressurization of the suction piping when there is a difference in the design pressure rating of the piping. In this case, the suction and discharge piping are made of the same material and have the same design pressure rating. Consequently, there is no safety significance in the order of closure of the 1A KF pump isolation valves.

NRC Resolution: Recommendation accepted. A review of site and corporate tagout Administrative Procedures did not identify any requirements that these two valves must be manipulated in a particular order. Additionally, the examiners independently reviewed the KF system print and confirmed that the suction and discharge piping was made of the same material and had the same design pressure rating. Consequently, the sequence of tagging the suction and discharge isolation valves was changed to non-critical. The only critical aspect of the tagout sequence was that the pump electrical power must be tagged first, the suction and discharge valves next, and the vent and drain valves last.

#### Administrative JPM SRO-4

Comment Summary: This administrative JPM required the SRO applicants to review and complete a Gaseous Waste Release (GWR) for Unit 2. The JPM was designed with two intentional errors in it. The licensee noted that the examiner guidance was not adequate to ensure the applicants were directed to identify all errors if just one of the two was identified and the task stopped. Additionally, the licensee noted that GWR packages are delivered to the control room in color-coded folders which provide a visual cue to the SRO as to which unit the GWR applied. The JPM was not administered in a manner consistent with control room protocol. The critical action in the JPM was to not issue the GWR. Identification of either error and stopping the task should be sufficient for satisfactory performance.

NRC Resolution: Recommendation accepted. The JPM author did not anticipate that the applicants may identify the error listed second in the documentation first. Thus there was no examiner cue to ask the applicant to identify all problems with the GWR. Also, the examiners independently confirmed that the GWR package is normally provided to the SRO in a color-

coded folder in the control room. The acceptance criteria for this task were changed such that identification of at least one of the two errors with refusal to issue the GWR received passing credit.

## System JPM I-2

Comment Summary: This system JPM involved operator response to a loss of RHR due to a leak while in mid-loop conditions. It was set up as a normal path task with the applicant being directed to makeup to the RCS using the Safety Injection system to the cold legs (all other sources of injection were unavailable based on the initial conditions.) However, this success path involved recognition that the only available SI pump had been racked out to comply with LTOP requirements. A red collar and white tag sticker should have been placed on this SI pump switch to indicate that the breaker was racked out for configuration control. Due to an oversight during examination validation, the only indications that the pump breaker was racked out were the breaker indicating lights on the main control board. The absence of a collar and sticker with no indicating lights could mean the pump was racked out for reasons other than configuration control. Consequently, two courses of action were possible for the applicants to take. First, they could send an operator to investigate the racked out breaker. This was the expected course of action for this JPM and cues had been prepared consistent with returning the breaker to service. Applicants that chose this course could successfully complete the JPM as designed. The other course of action was to quickly conclude the pump was unavailable (e.g., an alternate path JPM was in progress) and to pursue a non-injection method of adding water to the RCS to prevent core uncover. The critical part of the JPM was to provide a (any) source of makeup to the core.

NRC Resolution: Recommendation accepted. The NRC agrees the red collar and white tag sticker were not installed on the affected SI pump breaker during JPM administration. Examiner review of Enclosure 4.2 to OP/1/A/6200/006, "Removing the Safety Injection System from Standby Readiness" confirmed a step in the procedure directing the placement of a white tag on the SI pump breaker after it is racked out. The tag would have indicated that the pump was functional but racked out for administrative purposes. This tag would have provided a vital clue as to the availability of the SI pump to the applicants. The key aspect of this JPM was to restore reactor vessel level to prevent uncovering the fuel. Consequently, the acceptance criteria for this JPM were changed such that restoration of reactor vessel level using any of the available means specified in the procedure was sufficient for a passing grade.