



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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March 26, 2002

EA-01-298

David L. Wilson, Vice President of
Nuclear Energy
Nebraska Public Power District
P.O. Box 98
Brownville, Nebraska 68321

**SUBJECT: COOPER NUCLEAR STATION - FINAL SIGNIFICANCE DETERMINATION
FOR A WHITE FINDING AND NOTICE OF VIOLATION
(NRC INSPECTION REPORT NO. 50-298/01-12)**

Dear Mr. Wilson:

The purpose of this letter is to provide you with the final results of our significance determination for the preliminary white finding identified in the subject inspection report. The inspection revealed that you had implemented an improper validation process for your biennial written requalification examinations conducted between June 20 and July 27, 2000, for which you had not implemented prompt and appropriate corrective actions. The inspection report discussed that the validation process, given the similarity of examination questions from examination to examination, resulted in a compromise of the integrity of the written examinations administered by your staff. This inspection finding was assessed using the operator requalification human performance significance determination process (SDP) and was preliminarily characterized as white, an issue with low to moderate importance to safety, which may require additional NRC inspection.

At your request, a regulatory conference was held on February 1, 2002, to discuss your views on this issue. During the conference, the Nebraska Public Power District (NPPD) described its assessment of the significance of the findings and corrective actions.

During the conference, NPPD did not agree with the preliminary risk significance, which was characterized in our inspection report. Specifically, NPPD indicated that if the compromise issue was a "quality of exam" issue, then the issue would not be considered a finding in accordance with the operator requalification human performance SDP. This would be the case, in NPPD's view, because less than 20 percent of the examination questions were unacceptable.

Additionally, your staff indicated that there was no loss of control of examination material, no unintended exposure of examination material to students, and that examination validity was not affected. Therefore, NPPD's position was that since less than 20 percent of the operators failed the examination, the issue should not be considered a finding in accordance with the operator requalification human performance SDP. Your basis for this position was that the examination was both valid and reliable relative to the guidance in NUREG 1021, "Operator

Licensing Examination Standards for Power Reactors,” Revision 8, Supplement 1. Your staff indicated that the examinations were valid and reliable because: (1) the examinations contained the appropriate sampling of knowledge, (2) the examinations reflected actual operational conditions and decisions, (3) the operators were allowed exposure to examination banks, (4) there was a high degree of confidence in the operators’ testing knowledge, and (5) the examinations were consistent and repeatable.

Also, NPPD indicated that even if the examinations were compromised such that the validity was affected, then the significance of the issue would only be green in accordance with the operator requalification human performance SDP. Your staff argued this because it was NPPD’s position that the appropriate actions were taken immediately following the identification of the issue and no compensatory measures were necessary.

The assessment that no compensatory measures were necessary was based on the conclusions of your 2000 and 2001 reviews. Your initial review of the potential compromise in August 2000, concluded that the examination was valid. The review found that no questions were duplicated from examination to examination and that each examination question was either new or significantly modified. The subsequent review of the potential compromise in 2001 confirmed your staff’s previous conclusions and identified some additional issues, which did not affect the overall conclusion that the biennial written requalification examinations conducted in 2000 were valid.

Some of the additional issues identified by your staff during the review conducted in 2001 included a conclusion that the administration of the examination constituted a violation of 10 CFR 55.49. At the conference, NPPD also acknowledged that certain examination questions were similar, but concluded that the examination results were not affected by the validation method or timing used by your staff. The basis for NPPD’s conclusion was that licensed operator performance was typical of previous examination performance and the examination appropriately discriminated at the proper threshold for the minimum level of competency for operators at your facility. Your staff indicated that the procedural guidance for the examination administration was weak because it did not prohibit a crew validating an examination, which was constructed with the same learning objectives, approximately 24 hours prior to taking their own examination. In addition, your staff stated that not all individuals were exposed to the same questions during the validation and not all individuals conducted the validation.

Finally, your staff concluded that the worst-case examination analysis conducted by your staff, which concluded that three operators would have failed the examination, was not reasonable. After conducting an additional regrade of the examination, removing all the potentially compromised questions from those affected examinations regardless of whether an operator answered the question correctly or incorrectly, your staff concluded that no additional operators would have failed the examination. Therefore, NPPD concluded no operators resumed licensed duties without having passed a valid requalification examination.

We considered the information developed during the inspection, the additional information you provided in your letters dated January 25 and February 15, 2002, and the information provided at the conference. Based on the preponderance of the evidence before us, we conclude that the examination was compromised in such a way that both the exam validity and integrity were

affected. As a result, the NRC has concluded that the inspection finding is appropriately characterized as white, an issue with low to moderate importance to safety, which may require additional NRC inspections. The evidence that leads us to these conclusions is summarized in the following paragraphs.

During the conference, you agreed with NRC's final conclusion that the Cooper Nuclear Station's biennial written requalification examination conducted in 2000 did not meet the NRC requirements contained in 10 CFR 55.49. 10 CFR 55.49 states that the integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or examination. Our independent review concluded that the process used to validate the written requalification examinations, given the similarity of examination questions, compromised the integrity of the examinations. The operator requalification human performance SDP was developed partially on the basis of 10 CFR 55.49; it appropriately reflects the importance of maintaining a high degree of examination integrity. We also concluded that the validation process used by NPPD constituted a loss of control of examination material by exposing operators to specific examination reference material just prior to taking their own examinations. Therefore, we concluded that examination security was compromised as a result of the validation process.

Your staff's reviews concluded that the similarity of the questions did not impact the results of the examination. We do not agree with this assessment. For example, our review identified a number of instances in which approximately 50 percent of a crew validating a question involving a specific learning objective that was dissimilar from the one on their actual examination did not perform as well as other crews who validated a similar question involving a specific learning objective. This indicated that the similarity combined with the validation affected the examination results.

Since NPPD failed to document who validated the specific examination questions, it was not possible to determine which operators benefitted from the actual validation process. However, your staff stated during our inspection that interviews of operators you conducted revealed that at least one operator believed he had gained an advantage as a result of this validation process. This validation process combined with the similarity of each examination question provided an opportunity for operators to gain knowledge on how to answer a number of questions prior to taking their own examinations. This learning process, which occurred just prior to the crew's examination, affected the ability of the examination to make a reliable and valid determination that operators had the minimum level of competency at your facility. Because of the uncertainties introduced by the validation process, the increased difficulty of the examination from past biennial requalification examinations, and training improvements during the subject requalification cycle, we concluded there were too many variables to make a conclusive determination that examination validity was not affected based on examination results alone. We did, however, conclude that the validation process conducted by NPPD affected the examinations' ability to measure operator knowledge independently and objectively. Specifically, the validation process, given the similarity of the questions, resulted in elevated crew scores on those specific questions operators validated which were similar to the questions that appeared on their own examinations. Therefore, we concluded that the examination was compromised in such a way that both the examination validity and integrity were affected.

Also, we believe that the timing of the validation process relative to the administration of the actual tests influenced the examination results. This validation methodology, combined with the similarity of examination questions, becomes a more significant influence on the discrimination capability of the examination when the examination is an open reference examination and the reference material is reviewed by the operators just before this examination is administered. When this occurs, the examinations' ability to test operator knowledge could become biased by short-term knowledge gained through the examination validation.

During the regulatory conference, we requested that you provide us with the results of a regrade of the examinations, removing only those compromised questions that operators answered correctly. You provided the results of that regrade effort in a letter dated February 15, 2002. According to this regrade, two additional operators would have failed the biennial requalification examination administered between June 20 and July 27, 2000. Your letter also reiterated your assessment of the significance of the finding, your position that the subject biennial requalification examinations were valid, and your position that the removal of only those compromised questions that were answered correctly is inconsistent and inequitable. We determined that your final review, which deleted all the problematic questions from the examination even if an operator answered the question(s) incorrectly to be unsupportable and non-conservative because operators that answered the question incorrectly clearly demonstrated a lack of knowledge on the topic. Conversely, if an operator answered a question correctly, this could be attributed to the operator gaining knowledge to answer the question correctly as a result of recent exposure to a similar question. During our regrade of the subject examinations, we deleted only those compromised questions that operators answered correctly. As a result, we concluded that at least two operators resumed license duties even though, in retrospect, they did not pass the 2000 written requalification examination.

The operator requalification human performance SDP addresses whether the licensee took the appropriate compensatory actions immediately once the compromise was discovered. According to your corrective action documents, the potential examination compromise was identified by members of your training staff administering the examination some time in July 2000. The issue was not placed into your corrective action program until several weeks after it was identified. Meanwhile, your staff continued to validate and administer examinations in the same manner. When the issue was examined weeks later, this review of the issue was narrowly focused on examination results and procedure adherence. In our view, sufficient information was available, such that, the examination compromise should have been identified in July 2000.

We concluded that you failed to take immediate and appropriate compensatory actions when the validation process was questioned by your staff. Therefore, as a compensatory action in July 2000, validation and administration of the remaining examinations, in our view, should have been suspended pending the implementation of appropriate corrective actions. The aspect of the operator requalification human performance SDP which addresses whether the licensee took the appropriate compensatory actions immediately is answered "no." Therefore, we concluded that the outcome of the operator requalification human performance SDP is a white finding.

You have 10 business days from the date of this letter to appeal the staff's determination of significance for the identified white finding. Such appeals will be considered to have merit only if they meet the criteria given in NRC Inspection Manual Chapter 0609, Attachment 2.

The NRC has also determined that a violation of 10 CFR 55.49 occurred, in that the integrity of the 2000 requalification biennial written examination was compromised, as cited in the enclosed Notice of Violation (Notice). The circumstances surrounding the violation were described in detail in the subject inspection report. In accordance with the NRC Enforcement Policy, NUREG-1600, the Notice of Violation is considered escalated enforcement action because it is associated with a white finding.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

Overall, plant performance has been in the Degraded Cornerstone Column of the NRC Action Matrix, as described in NRC Inspection Manual Chapter 0305. This issue is the first issue affecting the mitigating system cornerstone at the Cooper Nuclear Station. We will use the NRC Action Matrix to determine the most appropriate NRC response for this finding. We will notify you by separate correspondence of that determination.

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/

Ellis W. Merschoff
Regional Administrator

Docket: 50-298
License: DPR-46

Enclosure: Notice of Violation

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ENCLOSURE

NOTICE OF VIOLATION

Nebraska Public Power District
Cooper Nuclear Station

Docket No. 50-298
License No. DPR-46
EA-01-298

During an NRC inspection conducted October 15 through November 29, 2001, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

10 CFR 55.49 states that "Applicants, licensees, and facility licensees shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or examination. This includes activities related to the preparation and certification of license applications and all activities related to the preparation, administration, and grading of the tests and examinations required by this part." 10 CFR 55.59 (a) requires each licensee to pass a comprehensive requalification written examination covering a 24-month requalification program.

Contrary to the above, between June 20 and July 27, 2000, the facility licensee compromised the integrity of the requalification biennial written examinations required by 10 CFR 55.59. Specifically, the facility licensee developed weekly requalification examinations that were similar to each other, then allowed some operators to validate at least 50 percent of the next weekly examination the day before taking their own examination. This affected the equitable and consistent administration of the examination.

This violation is associated with a white significance determination process finding (50-298/0112-01).

Pursuant to the provisions of 10 CFR 2.201, Nebraska Public Power District is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to the Regional Administrator, Region IV, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice of Violation (Notice), within 30 days of the date of the letter transmitting this Notice. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response 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), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Dated this 26th day of March 2002