November 21, 2003

Mr. Thomas Coutu
Site Vice President
Kewaunee Nuclear Plant
Nuclear Management Company, LLC
N490 Hwy 42
Kewaunee, WI 54216-9511

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT
NRC INSPECTION REPORT 05000305/2003005(DRS)

Dear Mr. Coutu:

On October 21, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Kewaunee Nuclear Power Plant. The enclosed report documents the inspection findings which were discussed on October 21, 2003, with Mr. J. McCarthy and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license with respect to your Licensed Operator Requalification Training Program. Specifically, the inspection focused on follow up activities associated with two unresolved items (URIs). The first URI (05000305/2002005-02) involved the adequacy of medical examinations of licensed operators and license applicants. The second URI (05000305/2002005-03) involved the adequacy of the Kewaunee simulation facility (simulator) to meet 10 CFR 55.46, "Simulation Facilities." Within these areas, the inspection consisted of selected examination of procedures and representative records, observation of activities, and interviews with personnel.

Based on the results of this inspection, there were two NRC-identified findings of very low safety significance (Green), which involved violations of NRC requirements. In addition, two issues were reviewed under the NRC traditional enforcement process and determined to each be a Severity Level IV violation of NRC requirements. However, because these violations were of very low safety significance and because the issues were entered into the licensee's corrective program, the NRC is treating these findings and issues as Non-Cited Violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of a Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region III, 801 Warrenville Road, Lisle, IL 60532-4351; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector Office at the Kewaunee facility.

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

Sincerely,

/RA/

Roger D. Lanksbury, Chief
Operations Branch
Division of Reactor Safety

Docket No. 50-305
License No. DPR-43

Enclosure: Inspection Report 05000305/2003005(DRS)

cc w/encl: D. Graham, Director, Bureau of Field Operations
Chairman, Wisconsin Public Service Commission
State Liaison Officer

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/RA/

Roger D. Lanksbury, Chief
Operations Branch
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Docket No. 50-305
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-305
License No:	DPR-43
Report No:	05000305/2003005(DRS)
Licensee:	Nuclear Management Company, LLC
Facility:	Kewaunee Nuclear Power Plant
Location:	N 490 Highway 42 Kewaunee, WI 54216
Dates:	June 2 through October 21, 2003 (On-site inspection June 2 through June 4, 2003, with periodic in-office review from June 10 through October 21, 2003.)
Inspector:	Hironori Peterson, Senior Operations Engineer
Approved by:	Roger D. Lanksbury, Chief Operations Branch Division of Reactor Safety

Enclosure 1

SUMMARY OF FINDINGS

IR 05000305/2003005(DRS); 06/02/2003 - 06/04/2003 (on-site) and 06/10/2003 - 10/21/2003 (periodic in-office review); Kewaunee Nuclear Power Plant; Licensed Operator Requalification.

This report covers an approximate 4-month period of periodic on-site and in-office review of baseline announced inspection for licensed operator requalification program review and Unresolved (URI) Item follow up. The inspection was conducted by a Region III inspector. Two NRC identified Green findings associated with Non-Cited Violations (NCVs) were identified. In addition, two Severity Level IV NCVs, based on traditional enforcement, were also identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG 1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified Findings

Cornerstone: Mitigation Systems

Medical Issues:

- Green. The inspector identified a Non-Cited Violation of 10 CFR 55.21, "Medical Examination," and 10 CFR 55.23, "Certification." The inspector identified that the facility licensee failed to conduct all the medical testing required by American Nuclear Standards Institute/American Nuclear Society (ANSI/ANS) 3.4 -1983, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," as committed to by the facility licensee. Specifically, the facility licensee was not testing its operators for nose sensitivity (i.e., ability to detect odor of products of combustion and of tracer or market gases) Section 5.4.2, "Nose," and neurological testing, (i.e., normal central and peripheral nervous system function), including tactile discrimination (Stereognosis) sufficient to distinguish among various shapes of control knobs and handles by touch, Section 5.4.14, "Neurological." Once identified, the licensee implemented immediate corrective actions to medically test all operators prior to returning to on-shift duties.

  This finding was more than minor because the inadequate medical examinations could result in potential consequences due to licensed operators who may not be medically qualified to perform licensed duties and could, therefore, potentially affect the health and safety of the public. The finding was also of very low safety significance because no actual consequences were noted due to adverse medical conditions. In addition, no adverse operational events were observed to have occurred due to inadequate medical conditions or missed medical tests. (Section 1R11.1)

- Severity Level IV. The inspector identified a Level IV Non-Cited Violation of 10 CFR 50.9, “Completeness and Accuracy of Information.” The inspector identified that the facility licensee, between January 2, 2000, through August 26, 2002, submitted to the NRC, NRC Form 396's for 13 individuals applying for an initial operator’s license and 18 licensed operators applying for renewal of their operator licenses, that were not accurate in all material respects. Specifically, the NRC Form 396 certified that each applicant and licensed operator met the medical requirements of ANSI/ANS 3.4-1983. In fact, all the applicants and licensed operators were not adequately examined for all medical tests as required to meet the minimum standards of ANSI/ANS 3.4-1983. This information was material to the NRC because the NRC relied on this certification to determine whether the applicant met the requirements to operate the controls of a nuclear power plant pursuant to 10 CFR 55.

  Because the issue affected the NRC’s ability to perform its regulatory function, it was evaluated using the traditional enforcement process. The finding was determined to be of low safety significance because, although medical testing was incomplete, subsequent testing of the operators indicated apparent satisfactory condition for the two missed medical testing requirements. However, the regulatory significance was important and considered more than minor because the incorrect information was provided under sworn statement to the NRC and potentially could have impacted a licensing decision for unsatisfactory medical test results or the lack of satisfactorily completing the medical tests. (Section 1R11.1)

Simulator Issues:

- Green. The inspector identified a Non-Cited Violation of 10 CFR 55.46, “Simulation Facility.” The inspector identified that the facility licensee failed to adequately conduct simulator performance testing throughout the life of the simulator. In addition, the facility licensee failed to correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing. In addition, the facility licensee was committed to follow ANSI/ANS 3.5-1985, “Nuclear Power Plant Simulators for Use in Operator Training,” as the way they would meet 10 CFR 55.46. Specifically, the licensee failed to conduct performance testing, with regard to normal evolutions core performance tests for Cycle 25, the most recent core load in the actual reactor. The licensee could only provide Cycle 7 normal evolutions core performance tests. No core performance tests had ever been conducted for Cycles 8 through 25, a period of 17 cycles. Once identified, the licensee implemented corrective actions to adequately complete core performance testing for Cycle 25 and expedite repairs to long standing modeling and hardware discrepancies.

  This finding was more than minor due to potential negative training. The realistic potential of providing negative training based on significant simulator deficiencies compared to the actual plant, including inadequate testing of the simulator to assure that the simulator appropriately replicates the actual plant, could potentially affect operator actions on the actual plant. The finding was also of very low safety significance because the discrepancies were only on the

simulator and did not actually affect the real plant operations. Furthermore, no actual impact on plant equipment or personnel safety occurred due to lack of simulator testing. (Section 1R11.2)

- Severity Level IV. The inspector identified a Level IV Non-Cited Violation of 10 CFR 50.9, "Completeness and Accuracy of Information." The inspector identified that on or about August 13, 2002, a senior facility licensee representative submitted to the NRC, NRC Form 398's for three individuals, each applying for an initial operator's license, that were not accurate in all material respects. The facility licensee provided inaccurate information by certifying on the NRC Form 398; that the initial operator license applications for three individuals had appropriately met the minimum training requirements for reactivity manipulations on the referenced facility simulator in accordance with 10 CFR 55.31 (a)(5) and 10 CFR 55.46 (c)(2). In fact, the simulator was not adequately maintained and tested per NRC requirements. This information was material to the NRC because the NRC relied on this certification to determine whether the applicant met the requirements to take the NRC license examination and, once they successfully passed the examination, to issue an operator license authorizing the applicants to operate the controls of a nuclear power plant pursuant to 10 CFR 55.

  Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated using the traditional enforcement process. The finding was determined to be of low safety significance because, although simulator testing was inadequate and incomplete, subsequent testing of the simulator was determined to adequately meet the ANSI requirements. However, due to inadequate testing and overall lack of maintaining the simulation facility in accordance with requirements of 10 CFR 55.46, the regulatory significance was determined to be important because the incorrect information was provided under sworn statement to the NRC and would have impacted a licensing decision for unsatisfactory simulator test results or the lack of testing the simulator. (Section 1R11.2)

B. Licensee Identified Findings

No findings of significance were identified.

REPORT DETAILS

Summary of Plant Status

During this inspection period the plant operated at or near 100 percent power.

1. REACTOR SAFETY

Cornerstones: Mitigating Systems

1R11 Licensed Operator Requalification (71111.11B)

.1 Conformance With Operator License Conditions (Medical)

a. Inspection Scope

The inspector evaluated the facility and individual operator licensees' conformance with the requirements of 10 CFR 55. Specifically, the inspector reviewed four licensed operators' medical records maintained by the facility licensee and assessed compliance with the medical standards delineated in ANSI/ANS 3.4-1983, "American National Standard Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," and with 10 CFR 55.21 and 10 CFR 55.25. The inspector interviewed management personnel, regulatory assurance representatives, and two registered nurses (affiliated with the contract medical facility, and the Point Beach Nuclear Power Plant). As part of this inspection, the inspector focused on the Unresolved Item (URI) identified during the 2002 Licensed Operator Requalification Inspection (URI 05000305/2002005-02, Adequacy of Medical Examinations).

b. Findings

Introduction:

The inspector identified, with respect to URI 05000305/2002005-02, two issues that were considered to be of very low safety significance and were dispositioned as Non-Cited Violations (NCVs). The first issue was a Green finding that involved an NCV of 10 CFR 55.21, "Medical Examination," and 10 CFR 55.23, "Certification." The inspector identified that the facility licensee failed to conduct all the medical testing required by ANSI/ANS 3.4-1983, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," as committed to by the facility licensee. This issue was considered to be NRC-identified because the licensee had failed to identify it for at least 4 years and did not identify it without the inspector's questions.

The second issue was a Level IV finding that involved an NCV of 10 CFR 50.9, "Completeness and Accuracy of Information." The inspector identified that licensee management provided inaccurate information to the NRC regarding the medical conditions of 13 initial reactor operator license applicants and 18 license renewal operators. Specifically, the licensee submitted Form NRC 396 certifying that each licensed operator and applicant for operator licenses met all medical requirements for holding an operator license in accordance with ANSI/ANS 3.4-1983. However, the

licensee failed to perform two required medical tests. The issue was considered to be of very low safety significance, but was considered to have important regulatory significance because the information was provided to the NRC under sworn statement and could have potentially affected NRC licensing actions.

Description:

The inspector determined that an apparent long standing programmatic deficiency had existed at the Kewaunee Nuclear Power Plant, whereby the licensee's medical physician was not adequately testing all licensed operators (both initial and renewal licensees) in accordance with 10 CFR 55.21 & 55.23 with respect to ANSI/ANS 3.4-1983. Specifically, certain medical conditions identified by the inspector in the licensed operators' medical records led to the identification that two medical tests required to be conducted in accordance with ANSI/ANS 3.4 (nose sensitivity, Section 5.4.2, and neurological testing, Section 5.4.14) were not tested on any of the 31 licensed operators. At a minimum, this issue involved the last two biennial medical examinations conducted in years 2000 and 2002. The lack of testing also included the most recently licensed operators following the September 2002 initial license examination. The failure to conduct all the required medical examination tests was a potential violation of 10 CFR 55.21 and 55.23. In addition, the facility licensee submitted Forms NRC-396, "Certification of Medical Examination by Facility Licensee," and NRC-398, "Personal Qualification Statement - Licensee," attesting to the accuracy of the information provided to the NRC concerning medical and training certification of the applicants and previously licensed operators. The fact that these forms were materially inaccurate was a potential violation of 10 CFR 50.9, "Completeness and accuracy of information."

The NRC Forms 396 and 398, the medical certification and personal qualification statement, respectively, are signed by the site vice-president and submitted to the NRC for operator license applications and subsequent license renewals. These forms indicated that each applicant for an NRC operator license and renewal license has satisfactorily completed and met the minimum medical requirements of ANSI/ANS 3.4 and the training requirements of 10 CFR 55. In addition, the forms further indicated that any false statement or omission may be subject to civil and criminal sanctions.

On June 3, 2003, the inspector performed a follow up inspection to ascertain the status of any corrective actions pertaining to the URI. The inspector reviewed four additional licensed operator medical records. The inspector identified another potentially disqualifying medical condition pertaining to different medications and a medical condition, "Vasovagal Syncope" (fainting and dizziness with spells of unconsciousness). The medical information was forwarded to the NRC contract physician for review. The NRC contract physician determined no actions were necessary. In addition, based on the follow up inspection and further review of records, the inspector determined that program weaknesses existed, whereby, lack of management oversight led to failure to conduct the required medical testing of all initial license applicants and biennial medical testing of licensed operator for renewal of licenses. In fact, the inspector determined that the licensee had not performed an audit of the medical records or testing practices until this problem was identified by the inspector.

The inspector verified the facility licensee's immediate corrective actions and the condition reports tracking the deficiency, CAP 013062, "Failure to Perform Portions of the Medical Certification Tests for Licensed Personnel," and CAP 013080, "Identified Administration Discrepancies in RO/SRO Medical Records." The licensee took the following corrective actions, which were considered to be prompt, from the time the licensee was put on notice by the NRC that a problem existed with the complete and accurate performance and reporting of the medical examinations. The licensee's corrective actions were considered adequate; however, the licensee did not perform a formal root cause investigation.

- The medical physician who performed these medical evaluations was terminated from employment with the contract medical facility.

- The contracts between the medical facility and the utility were altered to specifically require a review against the ANSI standard.

- The administrative procedure governing the medical reporting process was revised, including the development of a comprehensive medical checklist.

- The Kewaunee medical records were audited by a third party medical physician to identify any additional problems with medical conditions that were not reported to the NRC.

- The licensee implemented immediate corrective action by conducting the two missed tests on all operators before they were allowed back on-shift.

The two missed medical tests were conducted using a scratch and sniff card to verify that licensed personnel can detect odors, and a bag containing two different types of control switches to verify that the licensed personnel could distinguish between two switches. The licensee determined that these tests were simple enough in nature to be conducted by plant personnel and subsequently reviewed and certified by a medical physician.

Analysis:

The inspector reviewed the missed medical examination issue against the guidance contained in Appendix B, "Issue Dispositioning Screening," of Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports." This finding affected the mitigating system cornerstone objective because inadequate medical examinations on operator license applicants and licensed operators could result in potential consequences of licensed operators who may not be medically qualified to perform licensed duties and could cause operational errors, therefore, potentially endangering the health and safety of the public. Consequently, the safety significance of this issue was determined to be more than minor.

The inspector reviewed this issue in accordance with Manual Chapter 0609, "Significance Determination Process (SDP)," Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)." The SDP concerning medical issues focused on general record deficiencies exceeding a specified threshold

of 20 percent of the records reviewed. Based on this SDP, the inspector determined that this finding was of very low safety significance (Green) because the failure to conduct the required medical examination tests for all licensed operators and initial license applicants exceeded the 20 percent threshold for record deficiencies.

The NRC relied on the NRC Form 396's, signed by the site vice-president, as the facility licensee's certified evidence to the NRC of the medical certification to comply with 10 CFR 55.21 and 55.23. The submitted forms, signed by the site vice-president, affirmed each applicant's medical condition and general health as adequate and allowed the NRC to perform the regulatory processes to authorize an applicant to take the NRC initial license examination and to issue an NRC operator license, once the applicant successfully passed the NRC examination. In addition, the same form authorized the renewal of operator licenses in accordance with 10 CFR 55.57, "Renewal of Licenses."

The inspector determined that the failure to provide accurate and complete information to the NRC regarding complete medical evaluations of initial reactor operator license applicants and previously licensed operators was a significant regulatory issue and a violation of 10 CFR 50.9. In addition, because violations of 10 CFR 50.9 are considered to be violations that potentially impede or impact the regulatory process, they are dispositioned using the traditional enforcement process instead of the SDP. Using IMC 0612, Appendix B, the inspector determined that the finding was more than minor because the information was provided to the NRC signed under oath by the site vice-president and would have resulted in a reconsideration of a NRC regulatory position. Specifically, without further inquiry to the adequacy and completeness of the medical examinations, licensing actions completed for initial license applicants and operators for license renewal would have been reexamined. However, following the licensee's corrective action to complete the two missed medical tests, no adverse operational events were observed to have occurred due to inadequate medical conditions or missed medical tests. The lack of an actual consequence was only due to the lack of unsatisfactory health conditions directly affecting plant operations.

Enforcement:

Part 55.21 of 10 CFR required, in part, that an applicant for a 10 CFR 55 license and current 10 CFR 55 licensee have a medical examination by a physician every two years. The physician shall determine that the applicant or licensee meets the requirements of 10 CFR 55.33(a)(1). In addition, 10 CFR 55.23 required that to certify the medical fitness of the applicant, an authorized representative of the facility licensee complete and sign Form NRC-396, "Certification of Medical Examination by Facility Licensee." The licensee committed to follow ANSI/ANS 3.4-1983 as the way they would meet Part 55.46 (d)(1). ANSI/ANS 3.4-1983 required, in part, that the primary responsibility for assuring that qualified personnel are on duty rests with the facility licensee. In addition, the health requirements set forth within the standard provide the minimum necessary to determine that the physical condition and general health of the operators were not such as might cause operational errors endangering the public health and safety. The specific health requirements and disqualifying conditions are described in Section 5.3, "Disqualifying Conditions," and Section 5.4, "Specific Minimum Capacities Required for Medical Qualifications," of the ANSI standard. However, on September 23, 2002, prompted by the inspector's assessment regarding the inadequacy

of the facility licensee's medical examinations, the licensee conducted reviews of all medical examinations and records and found that certain tests per ANSI/ANS 3.4-1983 had not been performed. In fact, all initial license applicants and previously licensed operators (31 operators) were not adequately examined for all medical tests as required to meet the minimum standards of ANSI/ANS 3.4-1983. Specifically, the facility licensee was not testing its operators for nose sensitivity (Section 5.4.2) and neurological testing (Section 5.4.14).

This Green finding concerning the missed medical tests is considered a violation of 10 CFR 55.21 and 55.23. Because of the very low safety significance, this violation is being treated as a Non-Cited Violation (05000305/2003005-01) consistent with Section VI.A.1 of the NRC Enforcement Policy. This issue was in the licensee's corrective action program as CAP 013062 and CAP 013080. The licensee adequately implemented immediate corrective action and satisfactorily performed the two missed medical tests. In addition, the licensee implemented additional corrective actions as indicated in this report. URI 05000305/2002005-02 is closed.

Part 50.9 of 10 CFR required, in part, that information provided to the Commission by an applicant for a license or the licensee be complete and accurate in all material respects. Part 55.23 of 10 CFR required that an authorized representative of the facility licensee certify the medical fitness of an applicant by completing and signing NRC Form 396. NRC Form 396, when signed by an authorized representative of the facility licensee, certified that a physician conducted a medical examination of the applicant as required in 10 CFR 55.21, and the guidance contained in ANSI/ANS 3.4-1983 was followed in conducting the examination and making the determination of medical qualification. However, on or about August 26, 2002, the licensee submitted NRC Form 396's for 13 applicants applying for an initial operator's license, in accordance with 10 CFR 55.21, that were not accurate in all material respects. In addition, between January 2, 2000, to March 26, 2002, the facility licensee also submitted NRC Form 396's for 18 licensed operators for renewal of their operator licenses that were not accurate in all material respects. Specifically, the NRC Form 396's certified that each applicant and licensed operator met the medical requirements of ANSI/ANS 3.4-1983. In fact, all the applicants and licensed operators were not adequately examined for the two missed medical tests as required to meet the minimum standards of ANSI/ANS 3.4-1983. This information was material to the NRC because the NRC relied on this certification to determine whether the applicant met the requirements to operate the controls of a nuclear power plant pursuant to 10 CFR 55.

This Severity Level IV finding concerning the inaccurate information is considered a violation of 10 CFR 50.9. The violation was determined to be of very low safety significance because no adverse operational events were observed to have occurred due to inadequate medical conditions or missed medical tests, but was of significant regulatory concern because there was the potential for taking an incorrect licensing action based on the information that was provided by the licensee. Subsequently, this violation is being treated as a Non-Cited Violation (05000305/2003005-02) consistent with Section VI.A.1 of the NRC Enforcement Policy.

.2 Conformance With Simulator Requirements Specified in 10 CFR 55.46

a. Inspection Scope

The inspector assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, "Simulation Facilities." The inspector also reviewed a sample of simulator performance test records (i.e., transient tests, malfunction tests, and reactor core performance tests), simulator work order records, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspector reviewed and evaluated the discrepancy process to ensure that simulator fidelity was maintained. This was accomplished by a review of discrepancies noted during the inspection to ensure that they were entered into the licensee's corrective action system and by an evaluation to verify that the licensee adequately captures simulator problems and that corrective actions were performed and completed in a timely fashion commensurate with the safety significance of the item (prioritization scheme). The inspector also reviewed the licensee's recent simulator core modeling performance testing to assess the adequacy of the simulator core replicating the actual reactor plant core. As part of this inspection, the inspector focused on the URI identified during the 2002 Licensed Operator Requalification Inspection (URI 05000305/2002005-03, Adequacy of the Plant-Referenced Simulator to Conform With Simulator Requirements in 10 CFR 55.46).

b. Findings

Introduction:

The inspector identified, with respect to URI 05000305/2002005-03, two issues that were considered to be of very low safety significance and were dispositioned as Non-Cited Violations (NCVs). The first issue was a Green finding that involved an NCV of the simulator fidelity regulation, 10 CFR 55.46(d), "Continued Assurance of Simulator Fidelity." The inspector identified that the facility licensee failed to adequately conduct the required core performance testing throughout the life of the simulator and to maintain simulator fidelity as required by ANSI/ANS 3.5-1985, "Nuclear Power Plant Simulators for Use In Operator Training," as committed to by the facility licensee.

The second issue was a Level IV finding that involved an NCV of 10 CFR 50.9, "Completeness and Accuracy of Information." The inspector identified that licensee management provided inaccurate information to the NRC regarding the training requirements for reactivity manipulations using the simulator for three initial reactor operator license applicants. Specifically, the licensee submitted NRC Form 398's, "Personal Qualification Statement - Licensee," certifying that the three applicants for operator licenses met all training requirements for holding an operator license in accordance 10 CFR 55.31, "Applications - How to Apply." However, the licensee failed to adequately test and maintain the simulator in accordance with 10 CFR 55.46(c), "Plant Referenced Simulators," to adequately take credit for reactivity manipulations on the simulator in lieu of the actual reactor. The issue was considered to be of very low safety significance, but was considered to have important regulatory significance

because the information was provided to the NRC under sworn statement and could have potentially affected NRC licensing actions.

Description:

The inspector determined that an apparent long standing programmatic deficiency had existed at Kewaunee Nuclear Power Plant, whereby the licensee's management and control of the simulation facility (simulator) was not being maintained per the requirements of 10 CFR 55.46, "Simulation Facility." Specifically, the licensee's maintenance of simulator core modeling and simulator fidelity appeared to not comply with the licensee's committed requirements for testing and maintaining the simulator in accordance with ANSI/ANS-3.5-1985, "Nuclear Power Plant Simulators for Use In Operator Training."

On September 19, 2002, during a routine Licensed Operator Requalification Inspection, the inspector identified three issues concerning potential violations of NRC regulations with respect to 10 CFR 55.46. The first issue concerned the adequacy of the license's conduct of periodic simulator performance testing throughout the life of the simulator as required by 10 CFR 55.46.(d)(1). The second issue concerned the licensee's training program to correct simulator modeling and hardware discrepancies, including discrepancies from performance testing in accordance with 10 CFR 55.46(d)(2). The third issue concerned the licensee's use of the simulator, with respect to simulator certification in accordance with 10 CFR 55.46(c)(2)(j), to meet experience requirements for applicants for initial operator and senior operator licenses as required by 10 CFR 55.31(a)(5).

The facility licensee was required by 10 CFR 55.46 (d)(1) to conduct performance testing throughout the life of the simulation facility in a manner sufficient to ensure that Paragraphs (c)(2)(ii), as applicable, and (d)(3) of 10 CFR 55.46 were met. Part 55.46 of 10 CFR also required that the results of performance tests must be retained for 4 years after completion of each performance test or until superseded by updated test results. The inspector identified that the licensee failed to conduct simulator normal evolution core performance testing between Core Cycle 7 (1982) and Core Cycle 25 (2002), a period of time covering 17 fuel cycles or approximately 19 years. The required simulator performance tests were not conducted with the appropriate frequency to assure continued simulator fidelity. In general, the inspector could not determine, with the information provided by the licensee, that results of performance tests were being retained 4 years after completion of each performance tests or until superceded by updated test results. Subsequent to the 2002 inspection, the licensee conducted core performance testing with regard to the Cycle 25 core load during October 2002.

The facility licensee was required by 10 CFR 55.46 (d)(2) to correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing. The inspector identified that the licensee failed to correct modeling and hardware discrepancies which could have affected operator actions as described in 55.45 and 55.59. The licensee's simulator management and configuration control procedures were found to be insufficient to provide direction for meeting simulator fidelity requirements. The procedures had several weaknesses that raised significant concerns. For example, the simulator corrective action program did not appear to

ensure the following: (1) that discrepancies were identified in a timely manner; (2) that discrepancies were properly prioritized for resolution commensurate with the safety significance of the item; (3) that corrective actions were proposed; and (4) that discrepancies were corrected in a timely fashion.

The facility licensee was required by 10 CFR 55.46(c)(2)(i) that if the plant-referenced simulator was to be used to meet experience requirements for applicants for operator and senior operator licenses, it must utilize models relating to nuclear and thermal-hydraulic characteristics that replicate the most recent core load in the nuclear power reference plant for which a license was being sought. At the time of the 2002 inspection, the licensee's plant-referenced simulator had not demonstrated through simulator performance testing results that it replicated the most recent core load in the nuclear power reference plant. The licensee could only provide simulator performance test results for Core Cycle 7 instead of Core Cycle 25. The inspector reviewed the most recent performance test provided by the licensee, at the time of the 2002 inspection, and found it to be insufficient to confirm that the plant-referenced simulator utilized models relating to nuclear and thermal-hydraulic characteristics that replicated the most recent core load. The licensee had submitted three applicants via NRC Form 398 as meeting the training requirements of 10 CFR 55.31(a)(5) when in fact the simulator had not been demonstrated that it met the requirements of 10 CFR 55.46 (c)(2)(i). The three initial operator license applicants were subsequently administered the initial license examinations during August 26 through September 6, 2002. As a result of the inspector's identification of this issue, the NRC held in abeyance three applicant NRC licenses until such time that the three license applicants performed the reactivity manipulations on the actual plant or that the simulator could be assessed and found to be adequate by the NRC staff with regard to Cycle 25. The facility licensee was in non-compliance with the Commission's regulation from the time the three applicants' NRC Form 398's were certified (August 13, 2002) until the time the subsequent performance test results for the Cycle 25 simulator normal evolution core performance test was determined to be adequate by the NRC (October 17, 2002), a period of approximately three months.

With respect to experience requirements for applicants to satisfactorily qualify to take the NRC initial operator license examination, the inspector identified a potential violation of 10 CFR 50.9. The potential violation was a result of the licensee providing information to the NRC that was inaccurate, and which could have potentially affected the NRC regulatory licensing process. Specifically, the facility licensee inappropriately took credit for reactivity manipulations on the simulator for three applicants when the simulator did not meet all the performance testing requirements for doing so.

On June 2, 2003, the inspector performed a follow up inspection to review the status of corrective actions pertaining to the URI. The inspector noted that the licensee significantly reduced the number of open simulator work orders (deficiency items) and implemented new procedures to encompass better tracking and prioritization of simulator deficiencies. In addition, the licensee implemented corrective action per CAP 013305, "Core Testing Action Request," and procedures were updated to better track and ensure proper testing of the simulator in accordance with ANSI/ANS 3.5-1985. However, the inspector also noted that although these corrective actions appeared satisfactory, the licensee did not perform a formal root cause investigation.

Analysis:

The inspector reviewed the simulator fidelity issue against the guidance contained in Appendix B, “Issue Dispositioning Screening,” of Inspection Manual Chapter (IMC) 0612, “Power Reactor Inspection Reports.” This finding affected the mitigating system cornerstone objective because it could affect the capability of the simulation facility to adequately meet the requirements to administer initial operator license examinations and provide continuing training of licensed operators in accordance with 10 CFR 55, “Operators’ Licenses.” The safety significance of this issue was more than minor due to potential negative training. The realistic potential of providing negative training based on significant simulator deficiencies compared to the actual plant, including inadequate testing of the simulator to assure that the simulator appropriately replicated the actual plant, could have potentially affected operator actions on the actual plant.

The inspector reviewed this issue in accordance with Manual Chapter 0609, “Significance Determination Process (SDP),” Appendix I, “Operator Requalification Human Performance Significance Determination Process (SDP).” Based on this SDP, the inspector determined that this finding was of very low safety significance (Green) because, although the potential for negative training was apparent, the discrepancy was on the simulator and the actual plant responded as expected, and no event occurred on the actual plant due to the potential negative training.

The NRC relied on the NRC Form 398's, signed by the site vice-president, as the facility licensee’s certified evidence to the NRC that each applicant, as a trainee, had successfully manipulated the controls of either the facility for which a license was sought or a plant-referenced simulator that met the requirements of 55.46(c). The facility licensee took credit for eligibility requirements on the simulator to meet the training requirements to comply with 10 CFR 55.31(a)(5) for three applicants. This certification allowed the NRC to perform the regulatory processes to authorize an applicant to take the NRC initial license examination and to issue an NRC operator license, once the applicant successfully passed the NRC examination.

The inspector determined that the failure to provide accurate and complete information to the NRC regarding complete training and eligibility requirements of initial reactor operator license applicants was a significant regulatory issue and a potential violation of 10 CFR 50.9. In addition, because violations of 10 CFR 50.9 are considered to be violations that potentially impede or impact the regulatory process, they are dispositioned using the traditional enforcement process instead of the SDP. Using IMC 0612, Appendix B, the inspector determined that the finding was more than minor because the information was provided to the NRC signed under oath by the site vice-president and would have resulted in a reconsideration of a NRC regulatory position. Specifically, without further inquiry to the adequacy and completeness of the training and eligibility requirements, licensing actions completed for initial license applicants would have been reexamined. The finding was also determined to be of low safety significance because subsequent testing of the simulator was determined to adequately meet the ANSI requirements

Enforcement:

Part 55.46 (d)(1) of 10 CFR required, in part, that the facility licensee conduct simulator performance testing throughout the life of the simulator and that the results of the performance test must be retained for 4 years after completion of each performance test, or until superceded by updated test results. Part 55.46 (d)(2) of 10 CFR required, in part, that the facility licensee correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing. In addition, the facility licensee was committed to follow ANSI/ANS 3.5-1985 as the way they would meet Part 55.46. However, the licensee failed to conduct performance testing, with regard to normal evolutions core performance tests for Cycle 25, the most recent core load in the actual reactor. The licensee could only provide Cycle 7 normal evolutions core performance tests. No core performance tests had ever been conducted for Cycles 8 through 25, a period of 17 cycles. In addition, the licensee failed to correct long standing modeling and hardware discrepancies which potentially affected operator actions.

This Green finding is considered a violation of 10 CFR 55.46. Because of the very low safety significance, this violation is being treated as a Non-Cited Violation (05000305/2003005-03) consistent with Section VI.A.1 of the NRC Enforcement Policy. This issue was in the licensee's corrective action program as CAP 013305. During October 2002, the licensee satisfactorily completed the performance testing for Cycle 25 the most recent core cycle at the time of the inspection. URI 05000305/2002005-03 is closed.

Part 50.9 of 10 CFR required, in part, that information provided to the Commission by an applicant for a license or by a licensee be complete and accurate in all material respects. Part 55.31(a)(5) of 10 CFR required that an authorized representative of the facility licensee certify that the applicant, as a trainee, has met the training and eligibility requirements to take the NRC operator license examination. NRC Form 398, when signed by an authorized representative of the facility licensee, certified that the applicant, as a trainee, has successfully manipulated the controls of either the facility for which a license is sought or a plant-referenced simulator that meets the requirements of 55.46(c). However, on or about August 13, 2002, a senior facility licensee representative submitted to the NRC, NRC Form 398's for three individuals, each applying for an initial operator's license, that were not accurate in all material respects. The facility licensee provided inaccurate information by certifying on the NRC Form 398's that the initial operator license applications for three individuals had appropriately met the minimal training requirements for reactivity manipulations on the referenced facility simulator in accordance with 10 CFR 55.31 (a)(5) and 10 CFR 55.46 (c)(2). In fact, the simulator was not adequately maintained and tested per NRC requirements. This information was material to the NRC because the NRC relied on this certification to determine whether the applicant met the requirements to take the NRC license examination and, once they successfully passed the examination, to issue an operator license authorizing the applicants to operate the controls of a nuclear power plant pursuant to 10 CFR 55.

This Severity Level IV finding concerning the inaccurate information submitted to the NRC on NRC Form 398 is considered a violation of 10 CFR 50.9. The violation was

determined to be of very low safety significance because no adverse operational events were observed to have occurred due to inadequate simulator testing and the subsequent testing of the simulator was determined to be adequate to meet the requirements of 10 CFR 55.46. However, the finding was of significant regulatory concern because there was the potential for taking an incorrect licensing action based on the information that was provided by the licensee. Subsequently, this violation is being treated as a Non-Cited Violation (05000305/2003005-04) consistent with Section VI.A.1 of the NRC Enforcement Policy.

4OA6 Meeting(s)

Exit Meetings

The inspector presented the inspection results to Mr. McCarthy and other members of licensee management at the conclusion of the inspection on October 21, 2003. The licensee acknowledged the findings that were presented. The inspector confirmed with the licensee that although some proprietary information were reviewed, the associated material were subsequently returned to the licensee. No other proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Nuclear Management Company, LLC
J. McCarthy, Plant Manager
K. Davison, Operations Manager
W. Hunt, Training Manager
W. Godes, Operations Training General Supervisor
L. Gerner, Acting Regulatory Affairs Manager

Nuclear Regulatory Commission
R. Krsek, Senior Resident Inspector
R. Berg, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000305/2003005-01	NCV	Failure to perform two required medical test in accordance with 10 CFR 55.21 and 55.23. (Section 1R11.1)
05000305/2003005-02	NCV	Failure to provide accurate information to the NRC concerning licensed operator medical requirements per NRC Form 396. (Section 1R 11.1)
05000305/2003005-03	NCV	Failure to conduct simulator performance testing throughout the life of the simulator. (Section 1R 11.2)
05000305/2003005-04	NCV	Failure to provide accurate information to the NRC concerning eligibility requirements for operator license application per NRC Form 398. (Section 1R 11.2)

Closed

05000305/2002005-02	URI	Adequacy of Medical Examinations. (Section 1R 11.1)
05000305/2002005-03	URI	Adequacy of the Plant-Referenced Simulator to Conform With Simulator Requirements in 10 CFR 55.46. (Section 1R11.2)

Discussed
None.

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety but rather that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R11 Licensed Operator Requalifications

Four Licenced Operator Medical Records; dated various

ACE001949; Apparent Cause Evaluation - Failure to perform portions of the Medical Certification Tests for Licensed Personnel; dated September 26, 2002

CA 009243; Corrective Action - Failure to perform portions of the Medical Certification Tests for Licensed Personnel - Modify current and future contract specification with medical clinic; dated November 8, 2002

CA 009244; Corrective Action - Failure to perform portions of the Medical Certification Tests for Licensed Personnel - Develop process/documentation to verify medical records; dated November 8, 2002

CA 009245; Corrective Action - Failure to perform portions of the Medical Certification Tests for Licensed Personnel - Develop license application process guidance; dated November 8, 2002

CAP013080; Identified Administration Discrepancies in RO/SRO Medical Records; dated September 25, 2002

CAP013062; Failure to Perform Portions of the Medical Certification Tests for Licensed Personnel; dated September 23, 2002

CAP013305; Core Testing Action Request; dated October 15, 2002

CAP029649; Medical Testing Deficiencies at KNPP; dated October 1, 2002

CR 127786; Inadequate Documentation for Initial License Training Individual Medical Status

OP-AA-105-101; Administrative Process For NRC License and Medical Requirements; Revision 2

OTH026577; Point Beach - Medical Testing Deficiencies at KNPP - Review CAP029649 and implement recommendations; dated October 3, 2002

OTH009049; Simulator Core Testing - No Comprehensive Testing Process for Placing New Cores in the Simulator; dated October 18, 2003

Contract Audit of Kewaunee Medical Records by Quad/Med Clinics; dated October 30, 2002

Baseline Smell Identification Test; new form used by Aurora Health Care; Revision 0

Smell Identification Test - Scoring Sheet; new form used by Aurora Health Care; Revision 0

KNPP Licensed Operator Data Collection Tool; new form used for medical test data; Revision 0

ANSI/ANS 3.4 - 1983 Checklist (KNPP Operator Physical); new form used by Aurora Health Care; Revision 0

Action Tracking Item Number 127786; Root Cause Report: Inadequate Documentation for Initial License Training Individual Medical Status

Executive Summary - Kewaunee Operations Training Root Cause Analysis, PII 02-1726; dated January 2003

Listing of Completed SWOs for last 12 months (168); dated various

Listing of Released SWOs (35); dated various

Listing of SWOs ready to be released (12); dated various

Listing of Active/Open SWOs (23); dated various

SWO 91-080; SSFI-Revise Control Logic for 1A, 1B and 1C Compressors; dated July 3, 1991

SWO 96-010; RCS Loop Flow Decreases too Quickly when a Reactor Coolant Pump is Stopped; dated May 1, 1996

SWO 99-009; During Loss of All AC, Bearing Temperature on the TDAFW Pump Increased and Alarmed on the PPCS; dated January 22, 1999

SWO 00-024; SW Pumps A1 and A2 Cannot be Started from DSP Per E-0-06; dated October 12, 2000

SWO 01-48; Manually Tripping the Supply Breaker for Buses 32, 33, 35, 42, 43, 45 Causes Tie-Breaker to Close; dated November 7, 2001

SWO 01-092; With 15 GPM RCS Leak, R2 and R7 Indicate 10 E5 MR/Hr; dated December 27, 2001

SWO 01-039; Steam Dump Controller in Manual Does Not Respond Properly, Minor Adjustment Result in a Massive Cooldown Rate; dated October 6, 2001

SWO 02-054; Many Inconsistencies Exist Between the Plant Control Room and the Simulator; dated March 11, 2002

SWO 02-092; Rod Worth in simulator appears to be less than actual plant; dated July 9, 2002

SWO 02-093; Pressurizer temperature change during a reactor trip from 100% power for Core Cycle 25 does not appear to be correct; test dated April 24, 2003

SWO 02-111; Foxboro Controllers in Simulator are Reverse from Plant, Operate in Opposite Direction; dated August 1, 2002

SCP 2.5 E-2; Simulator Testing; dated May 9, 2003

SCP 5.6; Simulator Work Orders; dated May 5, 2003

SCP 5.11; Control and Documentation of Simulator Validation Testing; dated March 17, 2003

IN 91-08; NRC Information Notice - Medical Examinations for Licensed Operators; dated February 5, 1991

IN 94-14; NRC Information Notice - Failure to Implement Requirements for Biennial Medical Examinations and Notification to the NRC of Changes in Licensed Operator Medical Conditions; dated February 24, 1994

LIST OF ACRONYMS USED

ADAMS	Agency Document Administrative Management System
ANSI/ANS	American Nuclear Standards Institute/American Nuclear Society
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DRS	Division of Reactor Safety
IMC	Inspection Manual Chapter
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
SDP	Significance Determination Process
URI	Unresolved Item