

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
OFFICE OF NEW REACTORS  
WASHINGTON, DC 20555-0001

August 7, 2012

**NRC REGULATORY ISSUE SUMMARY 2012-09  
ENDORSEMENT OF NUCLEAR ENERGY INSTITUTE GUIDANCE  
FOR USING AN ALTERNATIVE METHOD TO MANAGE CUMULATIVE FATIGUE AT  
NUCLEAR POWER REACTOR SITES**

**ADDRESSEES**

All holders of operating licenses for nuclear power reactors under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

All holders of nuclear power plant construction permits and early site permits with a limited work authorization and applicants for nuclear power plant construction permits that have a limited work authorization under the provisions of 10 CFR Part 50, who have received special nuclear material in the form of fuel assemblies.

All holders of a combined license (COL) for a nuclear power plant under the provisions of 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and applicants for a COL that have a limited work authorization, who have received special nuclear material in the form of fuel assemblies.

All contractors and vendors who implement fitness-for-duty (FFD) programs or program elements to the extent that the U.S. Nuclear Regulatory Commission (NRC) licensees and other entities rely on those contractor and vendor FFD programs or program elements to comply with 10 CFR Part 26, "Fitness for Duty Programs."

**INTENT**

The NRC is issuing this regulatory issue summary (RIS) to notify addressees of methods of managing cumulative fatigue that are endorsed by the NRC staff. By letter dated July 21, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML11180A261), the NRC staff transmitted its endorsement of the guidelines developed by the Nuclear Energy Institute (NEI) and contained in the addendum to NEI 06-11, Revision 1, "Managing Personnel Fatigue at Nuclear Power Reactor Sites," issued June 2011 (ADAMS Accession Number ML11189A177). Licensees may use these guidelines to implement the alternative to the minimum days off (MDO) requirements of 10 CFR Part 26, Subpart I, "Managing Fatigue," with the purpose of managing the cumulative fatigue of individuals who are

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subject to work hour limits. This RIS requires no action or written response on the part of an addressee.

## **BACKGROUND INFORMATION**

On March 31, 2008, the NRC published a final rule in the *Federal Register* (73 FR 16966) amending 10 CFR Part 26. The Commission updated the requirements of 10 CFR Part 26, reorganized the rule, and added Subpart I, which established requirements for managing the fatigue of individuals at operating nuclear power plants. The NRC made this last change in response to a need for clear and enforceable requirements for the management of worker fatigue. Among these fatigue management requirements are limits on the maximum number of hours an individual may work, requirements for rest breaks between shifts, and requirements for the MDO to be provided to each individual who is subject to the work hour requirements. These requirements are designed to work in concert to address both acute and cumulative fatigue through management, or mitigation, or both. Implementation guidance for the requirements was published in March 2009 and is titled, "Regulatory Guide 5.73, 'Fatigue Management for Nuclear Power Plant Personnel.'" The final guide endorses, with certain exceptions, additions and clarifications, an implementation guidance document that was submitted to the NRC by the Nuclear Energy Institute, NEI 06-11, Revision 1, "Managing Personnel Fatigue at Nuclear Power Reactor Sites."

Staff Requirements Memorandum (SRM)-SECY-09-0183, "Proposed Modification for Including Quality Control and Quality Verification Personnel within the Scope of Subpart I of 10 CFR Part 26," was issued on June 1, 2010 (ADAMS Accession Number ML101520654). In this SRM, the Commission directed the staff to "engage stakeholders and review the practical application of Part 26 subpart I including the advent of any unintended consequences that might undermine the purpose of the rule." The NRC held a public meeting on November 18, 2010 (ADAMS Accession Number ML103160388), to learn, directly from the affected stakeholders, more details about the unintended consequences of the MDO requirements. Additional public meetings took place on January 6, 2011 (ADAMS Accession Number ML103550089), and January 25, 2011 (ADAMS Accession Number ML110140315), to provide opportunities for stakeholders and the NRC staff to discuss alternatives to the MDO requirements.

The staff received three petitions for rulemaking to revise the cumulative fatigue management requirements covered by 10 CFR Part 26, Subpart I, among other issues. The petitions indicated that the MDO requirements were complex and inflexible and had resulted in unintended consequences that diminished the safety benefits of the rule.

In a public meeting on February 8, 2011, the NRC staff and stakeholders briefed the Commission on the implementation of the 10 CFR Part 26 fatigue management requirements. The nuclear power industry stakeholders conveyed many of the same concerns raised during the previous three public meetings. The NRC staff presented the scientific and technical bases for the requirements for managing cumulative fatigue and a proposal to address the concerns raised by the industry stakeholders. The NRC staff proposed a maximum, average 54-hour work week, averaged over a 6-week rolling period, as an alternative to the 10 CFR 26.205(d)(3) MDO requirements for non-outages. The NRC staff and industry stakeholders generally agreed that this proposal could address stakeholder concerns while meeting the objectives of the MDO requirements.

The NRC staff determined that an alternative approach to MDO using a weekly average of 54 hours worked, calculated based on a rolling period of up to 6 weeks, would keep work hours to levels comparable with typical MDO maximum limits while adding the simplicity and flexibility desired by industry. Similar to the MDO requirements, this alternative, when implemented with the other aspects of Subpart I that will remain unchanged, will help prevent most instances of cumulative fatigue by limiting the number of extended work weeks and work days. In those cases where extended schedules are worked, the alternative will limit their duration and therefore promote fatigue mitigation.

On March 24, 2011, the Commission issued SRM-SECY-11-0003, that directed the NRC staff to conduct an accelerated rulemaking to provide an alternative to the MDO requirements that would be consistent with the proposal presented by the NRC staff at the briefing on February 8, 2011. The Commission limited the scope of the rulemaking to the alternative to the MDO requirements. The Commission also directed the staff to provide implementation guidance concurrent with the rulemaking.

NEI indicated that it would author an addendum to its implementation guidance for the MDO requirements in 10 CFR 26.205(d)(3), in NEI 06-11, Revision 1 (this addendum was subsequently provided in June 2011, ADAMS Accession Number ML11189A177). The NRC held public meetings on April 27, May 11, June 1, and June 23, 2011, to discuss implementation guidance for the alternative to the MDO requirements (ADAMS Accession Numbers ML11102A071, ML11119A200, ML11139A193, and ML11144A133). The NRC published a final rule in the *Federal Register* (76 FR 43534) on July 21, 2011, adding the MDO alternative in 10 CFR 26.205(d)(7). Concurrently, the NRC staff endorsed the addendum to NEI 06-11 with a letter from Mr. Troy W. Pruett to Mr. John C. Butler (ADAMS Accession Number ML11180A261) on July 21, 2011.

## **SUMMARY OF ISSUE**

The addendum to NEI 06-11, Revision 1, provides industry-developed guidelines for licensees who implement the alternative cumulative fatigue management provisions under §26.205(d)(7) that were published in the *Federal Register* (76 FR 43534) on July 21, 2011. The alternative, known as the “maximum average work hours,” allows individuals who are subject to work hour limits to work no more than an average of 54 hours per week, when averaged over no more than a 6-week period (called the averaging period). The averaging period advances (rolls) forward in 7-day increments. The addendum includes discussions of averaging periods, partial averaging periods, and how to begin a rolling averaging period as well as other guidance designed to provide a consistent implementation of the maximum average work hours approach to cumulative fatigue management.

The addendum augments and references the main document (NEI 06-11, Revision 1) rather than duplicating guidance for sections of the rule that were unchanged or where implementation was unaffected by the promulgation of the alternative requirements. For example, the addendum did not change the guidance on how to transition an individual from a status of not being subject to the work hour requirements to a status of being subject to the work hour requirements, regardless of when the individual is asked to make the transition—whether at the beginning of the averaging period or midweek (i.e., during a partial averaging period).

By letter dated July 21, 2011 (ADAMS Accession No. ML11180A261), the NRC endorsed the addendum to NEI 06-11, Revision 1. The NRC staff considers the guidance contained in the addendum to be an acceptable method for implementing the maximum average work hours alternative to the MDO requirements. This endorsement is effective until the staff revises Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel."

### **BACKFIT DISCUSSION**

The NRC is issuing this RIS to inform stakeholders that the NRC has endorsed industry implementation guidance that describes an alternate approach to managing cumulative fatigue. This RIS requires no action or written response. The NRC is not imposing or requiring any new positions on licensees. This RIS does not require licensees to change or modify procedures or processes. Any action on the part of addressees to adopt the maximum average work hours cumulative fatigue management approach, in accordance with the guidance contained in this RIS, is strictly voluntary and, therefore, is not a backfit under 10 CFR 50.109, "Backfitting." Consequently, the staff did not perform a backfit analysis.

### **FEDERAL REGISTER NOTIFICATION**

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because this RIS is informational and pertains to a staff position that does not represent a departure from current regulatory requirements and practice. The NRC staff interacted with NEI, industry representatives, members of the public, and other stakeholders in 4 public meetings from April through June 2011, during the development of the industry guidance contained in the addendum to NEI 06-11, Revision 1.

### **CONGRESSIONAL REVIEW ACT**

In accordance with the Congressional Review Act, the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of the Office of Management and Budget (OMB).

### **PAPERWORK REDUCTION ACT STATEMENT**

This RIS references information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). The OMB approved the existing requirements under OMB approval number 3150-0146.

### **PUBLIC PROTECTION NOTIFICATION**

The NRC may not conduct or sponsor, and a person is not required to respond to, an information collection unless the requesting document displays a currently valid OMB control number.

## CONTACTS

Please direct any questions about this matter to the technical contact listed below.

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