



Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

August 3, 2005

Annette Vietti-Cook
Secretary
United States Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTN: Rulemakings and Adjudications Staff

**SUBJECT: COMMENTS ON PROPOSED RULEMAKING, 10 CFR PART 26 –
FITNESS-FOR-DUTY**

Submitted via e-mail to SECY@nrc.gov

Dear Ms. Vietti-Cook:

Pursuant to NRC News Release No. 05-108 dated August 3, 2005, I submit the attached comments on the proposed revision to the Fitness for Duty rule, 10 CFR Part 26. I had intended to wait until the Federal Register notice was published, but couldn't wait any longer.

Sincerely,

David Lochbaum
Nuclear Safety Engineer

Attachment: UCS Comments on Proposed Revision to 10 CFR Part 26

UCS COMMENTS ON PROPOSED REVISION TO 10 CFR PART 26

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Subpart I	<p>UCS was involved in the ‘managing fatigue’ portion of this rulemaking from its inception years ago. This involvement included participation in numerous public meetings and review of hundreds of pages of documents prepared by the NRC staff. We came away from this involvement with the highest regard for the professionalism, dedication, and capability of David R. Desaulniers, David C. Trimble Jr., Jay Persensky, Clare C. Goodman, Rebecca L. Karas, and other NRC staff who devoted considerable time and effort to this rulemaking.</p> <p>Some of our comments below are critical of the proposed rulemaking language. By no means should such comments be misconstrued to suggest criticism of the NRC staff. To the contrary, there were times during our review of the proposed rulemaking when we had discomfort with some provision but were unable either to cleanly articulate the reason for the discomfort or recommend wording that would eliminate the discomfort. We opted to defer to the staff’s judgment in these cases based on our recognition that they had done extensive homework and applied considerable knowledge to the subject so as to warrant being given benefit of the doubt in gray areas.</p> <p>Our first comment is to formally thank the NRC staff for their sustained commitment over many years to this rulemaking effort.</p>
Subpart I	<p>An argument often expressed by industry representatives early on during the protracted series of meetings for this rulemaking and still made, albeit at a reduced frequency, later in the series was that worker fatigue rulemaking was unnecessary because no significant reactor events had yet been caused by worker fatigue, hence there was no problem to be resolved via the rulemaking.</p> <p>This argument is intellectually bankrupt for at least two reasons.</p> <p>First, the root cause evaluations of plant events that have developed in the past decade do not parse human performance finely enough to dismiss fatigue as either a primary or contributing factor. There are plenty of events where “failure to follow procedure” is identified as a cause. Why did the workers fail to follow the procedures? Incompetence? Fatigue? Just didn’t give a darn? If the root case evaluations formally evaluated whether fatigue played a role in human performance problems and always ruled fatigue out, the argument would have standing. But they don’t and it doesn’t.</p> <p>Second, it would be imprudent public policy and unwise business judgment to tolerate an unsafe practice until it caused mayhem. For example, General</p>

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	<p>Design Criterion 17 in Appendix A to 10 CFR Part 50 does not wait until after a core meltdown is caused by a loss of the electrical grid to require licensees to provide onsite electrical power sources. The NRC did not adopt the drug and alcohol regulations in 10 CFR Part 26 in June 1989 because the Three Mile Island (1979) and Chernobyl (1986) reactor accidents were caused by drunken or stoned workers. Likewise, the NRC need not wait until after a nuclear disaster is caused by fatigued workers before taking appropriate steps to guard against that undesired outcome.</p> <p>Data collected by the Nuclear Energy Institute and submitted to the NRC years ago when this rulemaking was young do show that excessive working hours is not rampant in the industry. In fact, the data show that most plant owners were responsibly managing working hours so as to guard against impairment from fatigue. But the data also show that some plant owners worked employees far beyond reason. This rulemaking is necessary to curb those owners who could not or would not deal with this issue responsibly.</p> <p>This rulemaking is necessary to provide adequate protection against impairment from fatigued workers.</p>
§26.197 (b) (1)	<p>The requirement that the licensee’s FFD program explicitly describe the process for making and handling self-declarations by all workers of fatigue is absolutely vital to the efficacy and integrity of the program.</p> <p>The language proposed in this section resolves a concern UCS had when the industry first proposed reducing the scope of the work force subject to work hour controls (i.e., the subset of the work force defined by §26.199 (a) vs. the full set defined by §26.25 (a)). We were concerned that if an individual was not covered within the scope of §26.199(a), a licensee could use that exclusion to force that individual to work even when that individual was experiencing fatigue. The proposed language assures appropriate checks and balances are in place to limit abuses in both directions – management forcing fatigued workers to stay on the job and workers using fatigue self-declaration to supplement their sick and vacation times.</p>
§26.197 (d)	<p>This proposed language requires licensees to retain applicable records for at least three years. The requirement for recordkeeping is appropriate and the three-year duration provides fidelity with the inspection cycle of the reactor oversight process (ROP).</p>
§26.197 (e)	<p>This proposed language requires annual reporting of the number of waivers granted under §26.199(d)(1) and (d)(2). As UCS understands this language,</p>

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	<p>a licensee could submit a report stating that there were X waivers over the past year. But without knowing how many workers were included within the scope of §26.199 (a), knowledge of X waivers provides little or no insight. If that same licensee reports X+Y waivers the following year, it lacks meaning if the population within §26.199 (a) increased substantially in the second year. Conversely, if that same licensee reports X waivers again the following year, such a report could imply a sustained rate when in fact the population within §26.199 (a) decreased substantially.</p> <p>To provide appropriate context for the annual reporting of waivers, the rulemaking should also require the number of workers covered under §26.199 (a) to be reported.</p>
§26.199	<p>The Orders issued by the NRC on April 29, 2003, imposed work hour limits for security personnel comparable to those proposed by this language. The NRC received allegations from more than one nuclear plant site that the group averages were being distorted by the inclusion of extra individuals to pad the denominator of the calculation.</p> <p>This rule <u>must</u> explicitly state that only those individuals meeting one or more of the criteria in §26.199 (a) shall be included in the group average calculations.</p>
§26.199 (b)(1)(iii)	<p>The first sentence reading “Licensees need not calculate the work hours of an individual ... [who] has not performed such duties during the applicable calculation period” <u>must</u> be revised to read “Licensees need shall not calculate the work hours of an individual ... [who] has not performed such duties during the applicable calculation period.”</p> <p>As presently worded, this requirement would allow a licensee to pad the group work hour limit with untold legions of workers qualified to perform duties but never actually performing said duties. That is very wrong and far too tempting.</p> <p>The recommended rewording of this language would exclude workers from the group hour calculations when they are not performing those duties. Coupled with the untouched language in the rest of this subparagraph, those workers would be properly reintroduced into the calculations if and only if they resumed performing those duties. This is very right.</p>
§26.199 (d)(3)(iii)	<p>The final sentence of this subparagraph states “Licensees may not perform the face-to-face assessment more than four hours before the individual</p>

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	<p>beings performing any work under the waiver.”</p> <p>UCS is uncertain how this requirement would apply to a case where the face-to-face supervisory assessment allows an individual to cover a work period in excess of four hours. For example, consider the case where an individual is called in to cover an 8-hour shift due to sickness of another individual. Does the face-to-face supervisory assessment conducted immediately prior to the individual assuming the shift cover the entire 8-hour shift or only the first four hours of it? After all, a strict reading of the requirement as presently written might preclude that individual from beginning to perform any work under the waiver more than four hours after the face-to-face supervisory assessment.</p>
§26.199 (f)	<p>The proposed collective work hour limits are based on political science and not real science. There is zero scientific basis for collective work hour limits. Collective work hour limits are a political science contrivance intended to appease industry objections to the codification of individual work hour limits that some in the industry have been scoffing at for decades.</p> <p>Collectives do not get fatigued, individuals do.</p> <p>Collectives do not get unfit for duty, individuals do.</p> <p>Collectives must not be subject to work hour limits, individuals must.</p> <p>This collective work hour limit approach is inconsistent with the rest of the fitness for duty rule. For example, the urine testing performed to satisfy the drug and alcohol provision of this rule is not performed by having groups of workers pee into a bucket and then verifying their collective drug level and collective alcohol level are below some limit. That would be an insane way to ensure that individuals are fit for duty. It is an equally insane way to ensure that individuals are fatigue-free and fit for duty.</p> <p>The collective work hour concept is particularly onerous and dangerous when coupled – as it is in the proposed rule language – with the provision limiting the scope of work hour limits to only those workers with hands-on responsibilities. Per §26.199 (a), work hour limits would only apply to operators, key maintenance personnel, fire brigade members, armed security force officers, and the like. In other words, work hour limits would only apply to that subset of the work force whose mistakes could immediately translate into safety or security compromises. The work hour limits would not apply to other workers because there are other checks and balances to prevent a mistake from compromising safety or security. The collective work hour concept would allow some members of the critical subset of</p>

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	<p>workers to put in 72-hour weeks throughout an entire year – nay, an entire decade or even career. Thus, after defining those workers whose mistakes could have an immediate adverse safety or security consequence, the proposed rule would allow some of those critical employees to work sustained hours far in excess of where the science says impairment is likely to occur. That is wrong.</p> <p>Throughout the protracted series of public meetings on this rulemaking, supporters of the work hour limits approach asserted time and again that workers are unique individuals with some persons adjusting to and being accustomed to 40-plus working hours per week with no signs of impairment. True. So what? It is equally true that some persons can absorb far more alcohol than others before showing signs of impairment. Yet the criterion in 10 CFR Part 26 imposes a single blood alcohol concentration for all persons regardless of their tolerance. Subpart I must guard against impairment from fatigue the same way it guards against impairment from alcohol or drugs – by using science, real science, to define a criterion beyond which the typical person suffers impairment and impose restrictions preventing workers from exceeding that level.</p> <p>Collective work hour limits must be eliminated from any sane regulation on fitness for duty.</p>
§26.199 (f)(1)	<p>If collective work hour limits are based on political science vice real science, the basis for dropping the collective work hour limits during the first 8 weeks of an outage is pure science fiction.</p> <p>It is sad commentary that the NRC is so meek and feeble in the face of industry pressure that it must acquiesce and base federal regulations intended to protect public health and safety on political science and science fiction. The United States Department of Transportation does not bend to industry pressure and relax the work hour limits for truck drivers during the first 8 weeks of the Christmas season. The Federal Aviation Administration does not yield to industry pressure and relax the work hour limits for cockpit crews during heavy travel periods. But the NRC buckles to industry pressure and seeks to relax the work hour limits during the first 8 weeks of outages. Shame! Shame! Shame! (accompanied by rigorous finger rubbing)</p> <p>The notion that workers need not be protected as fully from impairment by fatigue during the first 8 weeks of an outage is balderdash. The blood alcohol concentration limit is not relaxed during the first 8 weeks of an outage. Pepsi products are not replaced by Coors in the vending machines at nuclear sites during the first 8 weeks of outages. The cut-off levels for marijuana, cocaine, morphine, and methamphetamine are not bumped up</p>

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	<p>during the first 8 weeks of an outage. That would be stupid. That would be poor public health policy. That would be wrong.</p> <p>It is equally stupid, equally poor public health policy, and equally wrong (if not stupider, poorer, and wronger) to relax protection against worker impairment due to fatigue during the first 8 weeks of an outage. It is as necessary to protect the American public from workers impaired by fatigue during the first 8 weeks of outages as it is to protect them from workers impaired by drugs and alcohol. But the proposed rule makes a distinction – a distinction based on financial needs of the plant owners rather than the health needs of the American public. That is wrong.</p> <p>Consider this situation – the two reactors with operating licenses at Indian Point. When both of the reactors are operating, the proposed regulation protects people living near Indian Point by limiting the collective work hours to an average of 48 hours per individual per week. The implicit rationale for this regulation is that an average of greater than 48 hours per week poses an undue risk to public health. Compliance with the 48-hour average provides reasonable assurance that operators are unimpaired as they respond to transients, that maintenance personnel are unimpaired as they repair emergency equipment, and that security personnel are unimpaired as they defend against radiological sabotage. But when one of the Indian Point reactors enters an outage and the other Indian Point reactor continues to operate, this proposed rule tosses out the collective work hour limits for the first 8 weeks for all personnel at the site – not just those working on the outage unit. Thus, operators in the control room of the operating reactor and maintenance personnel repairing safety equipment for the operating reactor can work up to 72 hours per week for 8 weeks. It makes no sense.</p> <p>Collective work hour limits must <u>not</u> be relaxed during outage periods.</p>
<p>§26.199 (f)(3) §26.199 (g)</p>	<p>The proposed rule is not clear in how the 8-week outage suspension of the collective work hour limits per §26.199 (f)(1) gets reconciled with the 13-week averaging period specified per §26.199 (b)(2).</p> <p>It appears as if a licensee could simply ignore any and all hours worked during the first 8 weeks of an outage and “reset” the collective work hour limits calculation on the first day after the 8-week free pass with a 48-hour limit.</p> <p>If so, then an entire group of individuals could work 72 hours per week for the first 8 weeks of an outage and then that entire group of individuals could work an average of 48 hours per week for the next 5 weeks. That would mean that the average individual in this group worked approximately 62</p>

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	<p>hours per week over the 13-week period.</p> <p>In addition, §26.199 (g) allows a licensee to use the collective work hour limits free pass for an 8-week outage as often as possible during a year, as long as the outages are separated by at least two weeks. Consider the following example allowed under these “rules:”</p> <ul style="list-style-type: none">Free pass – 8 weeks at 72 hours per weekReset clock – 2 weeks at 48 hours per weekFree pass – 8 weeks at 72 hours per weekReset clock – 2 weeks at 48 hours per weekFree pass – 8 weeks at 72 hours per week <p>Thus, operators, maintenance workers, and security guards could “legally” work an average of over 68 hours per week over a 28-week span. If the site had three operating reactors (e.g., Salem/Hope Creek, Palo Verde, or Oconee), it would mean control room operators on shift to protect the public in event of an accident working an average of nearly 70 hours per week for prolonged periods when the available science strongly shows that performance impairment is very likely to occur.</p> <p>It’s actually much, much worse. §26.199 (g) in reality tosses out the collective work hour limits when outages are separated by at least two weeks but less than 13 weeks. §26.199 (b)(2) requires collective work hours to be calculated “within an averaging period that may not exceed 13 weeks.” If the licensee specifies 13 weeks as the averaging period and the end of an outage resets the clock for starting an averaging period, then the collective work hour calculation does not become meaningful until 13 weeks after the end of an outage. In the interim, the only real limits on working hours are the individual limits in §26.199 (d). Thus, the above hypothetical scenario could easily become the following:</p> <ul style="list-style-type: none">Free pass – 8 weeks at 72 hours per weekReset clock – 12 weeks at 72 hours per weekFree pass – 8 weeks at 72 hours per weekReset clock – 12 weeks at 72 hours per weekFree pass – 8 weeks at 72 hours per week <p><u>All</u> of the workers in the target groups could “legally” work 72 hours per week for 48 straight weeks (or longer) under the proposed rulemaking. That’s unacceptable and must not be allowed.</p> <p>To rectify this situation, the rule must provide a hard cap on collective work hours. §26.199 (f)(3)(ii) imposes a cap of 54 hours per average person per week under certain circumstances. §26.199 (f)(2)(i) and other sections</p>

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	<p>impose a cap of 60 hours per average person per week for security personnel under other circumstances.</p> <p>§26.199 (f) must impose a cap of no greater than 60 hours per average person per week.</p>
§26.199 (g)	<p>The proposed rule is written under the implicit assumption that there are unique licensees for each reactor site. That assumption is false. Several companies own and operate reactors at multiple sites. It is not uncommon for these companies to develop specialty work groups that perform tasks like fuel handling and emergency diesel generator maintenance and to deploy these work groups to all of their sites.</p> <p>To illustrate this concern, consider a company that has three reactor sites called Plant Able, Plant Baker, and Plant Charlie. Each site has two reactors.</p> <p>Plant Able Unit 1 and Plant Baker Unit 2 have spring refueling outages while Plant Able Unit 2, Plant Baker Unit 1, and Plant Charlie Unit 1 have fall refueling outages. The other units have refueling outages next year. Thus, a crew devoted to emergency diesel generator maintenance could theoretically have the following work year:</p> <p style="padding-left: 40px;">December 1st to January 31st – Plant Charlie Unit 1 February 1st to March 31st – Plant Able Unit 1 April 1st to May 31st – Plant Baker Unit 2 September 1st to October 31st – Plant Able Unit 2 November 1st to December 31st – Plant Baker Unit 1</p> <p>The outages at each site are separated by more than two weeks, so the sustained outage provision of §26.199 (g) does not apply.</p> <p>This maintenance crew can legally work an average of nearly 65 hours per person per week over the entire calendar year at company owned reactors.</p> <p>The rule must not permit such sustained long working hours.</p>
§26.199 (a) §26.199 (f)(1)	<p>§26.199 (a) limits the scope of individuals subject to work hour controls to a subset of the work force. Those workers outside the scope of this section have no limits on their individual or collective work hours. None. No limits. 24 hours per day, 365 day per year would be technically allowable under the proposed rule for these workers (assuming the workers were stupid enough to be conned into it).</p> <p>Thus, an individual could work for 39 weeks at a reactor but performing</p>

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	<p>tasks outside the scope of §26.199 (a). With no limits, that individual could work 16 hours per day, 7 days per week the entire 39-week period. The following week, that individual could assume a task within the scope of §26.199 (a), but as the reactor begins an outage. Thus, that individual could work the following eight weeks at 72 hours per week.</p> <p>§26.199 (f)(1) relaxes collective work hour limits for the first 8 weeks of an outage. An implicit assumption behind this provision of the proposed rule is that the work force is not chronically fatigued at the beginning of the outage. This assumption might be justifiable for workers who have been covered by the non-outage collective work hour limits. But this assumption is <u>not</u> justifiable for workers outside the scope of §26.199 (a) for weeks or months prior to the outage suddenly entering the scope of the rule on Day 1 of the outage when the limits are relaxed. Such workers may be chronically fatigued already and, if so, are ill-suited for relaxed protection standards.</p> <p>If the intent of the rule is to protect public health and safety by assuring that personnel performing safety-significant tasks are unimpaired by fatigue, it falls way short.</p> <p>The rule must not allow an individual who is already chronically fatigued from entering the collective work hour limit pool, especially when that entry coincides with the 8-week outage “free pass.” A way to rectify this shortfall would be to revise §26.199 (b)(1)(iii) to require a formal, documented check before an “individual begins or resumes performing any of the job duties listed in paragraph (a)” of that person’s work hour history over at least the prior 13 weeks to verify that the individual is not already likely to be chronically fatigued.</p>
Subpart I	<p>Our final comment is to again formally thank the NRC staff for their sustained commitment over many years to this rulemaking effort.</p>