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The following papers were submitted by NEI on behalf of the Nuclear Industry as part of the Work Hours rulemaking effort. Since the rulemaking effort has been combined, this historical information is posted to this web site for continuity purposes.

White paper number 5 was not submitted.

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**White Paper Number One**  
**Defining Directing Work**  
**March 18, 2003**

**Purpose:** The draft rule requires that the work hour scheduling controls applies to personnel directing the operation or maintenance of structures, systems and components that a risk-informed evaluation process has shown to be significant to public health and safety. It is important that there be a clear and consistent understanding of what *directing* operation or maintenance means.

**Issue:** In the draft work scheduling control excerpts listed below, the term directing is used to provide succinct guidance to the industry. There is the potential however for misinterpretation since a well-defined operational definition of directing is not provided.

**26.30 Work Scheduling Controls**

(a) Work scheduling controls shall be implemented at nuclear power reactors authorized to operate. These controls shall apply to the following categories of job functions:

- (1) operation or *directing* the operation of structures, systems and components that a risk-informed evaluation process has shown to be significant to public health and safety;
- (2) maintenance or *directing* the maintenance of structures, systems and components that a risk-informed evaluation process has shown to be significant to public health and safety]

**Proposed Text for Definitions Section:** *Directing* operation or maintenance means a first-line supervisor, foreman, or team leader that is working in the power plant providing direct supervision of an ongoing operational evolution or maintenance task

**White Paper Number Two**  
**Covered Security Personnel**  
**March 18, 2003**

**Purpose:** The section is provided to list those categories of plant security personnel who are to be covered by the work scheduling controls associated with the work-hours portion of the worker fatigue rule.

**Issue:** The cited section includes watchpersons and, as such, is overly inclusive. Security watchpersons' duties and responsibilities are at a level where they should not be included within the scope of the work-hours portion of the worker fatigue rulemaking. Security watchperson duties are generally associated with vehicle/personnel access control and searches. The role of the security watchperson is much less critical than the armed member of the security force, central alarm station operator, secondary alarm station operator, or security shift supervisor. As such, the position of watchperson is much less susceptible to fatigue related errors of consequence. In all cases, the security watch stations manned by these personnel at key vehicle or personnel entrance points, are monitored and protected by other security personnel that fall within the scope of the work hour requirements.

Security watchpersons do not have the same link to fatigue-related issues (i.e., maintaining alertness in static posts and/or armed response decision making), as alarm station monitors or armed responders. As such, both their required vigilance levels and cognitive demands are less than those for personnel who have to maintain exceptional levels of visual and auditory vigilance; watching and listening for the unexpected (e.g., plant operators and security armed responders).

A risk-informed perspective would focus the most significant controls (i.e., work hour limitations) on the most risk-significant tasks. Other tasks, while of less risk significance, are still important and would be covered by the more general fitness for duty requirements of Part 26.

**Proposed Text:** '26.30 Work Scheduling Controls

(a) Work scheduling controls shall be implemented at nuclear power reactors authorized to operate. These controls shall apply to the following categories of job functions:

(1) operation or directing the operation of structures, systems and components that a risk-informed evaluation process has shown to be significant to public health and safety;

(2) maintenance or directing the maintenance of structures, systems and components that a risk-informed evaluation process has shown to be significant to public health and safety

(3) performing the duties of a Health Physics or Chemistry technician required as part of the minimum shift complement for the on-site emergency response organization;

(4) performing the duties of a Fire Brigade member responsible for understanding the effects of fire and fire suppressants on safe shutdown capability as required by 10 CFR XX.XX; or

(5) performing security duties as an armed member of the security force, central alarm station operator, secondary alarm station operator, or security shift supervisor, ~~or watchperson~~.

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**White Paper Number Three**  
**Granting Work-Hour Deviations**  
**March 18, 2003**

**Purpose:** This draft section specifies the level of plant management that can determine and grant work-hours deviations for operations, maintenance and security personnel.

**Issue:** (1) The industry agrees that a senior-level plant manager should both determine whether a deviation is necessary and grant the deviation after pre-specified conditions have been met, focusing on both the work to be performed and the person(s) being granted the deviation. The industry does think, however, that by specifying only operations and security shift supervisors the pool of potential senior-level decision makers is limited. Suggested alternative language would generically specify senior-level plant decision-making personnel, with the requirement that approved senior-level titles be specified in individual plant procedures.

(2) Anchoring the decision process to the prevention of conditions adverse to safety limits the normal decision making process. Although infrequent, non-safety or security related situations do arise in a plant that would be adequately compelling to justify granting individuals work-hour deviations. As a consequence, rigidly adhering to safety and/or security precursors as the only drivers for the thoughtful process of granting deviations significantly reduces licensee management prerogatives. If the process for granting follows an auditable path with required decision points reviewed by responsible plant management, the precursors to the decision should remain at the plant level.

**Proposed Text:** (3) Licensees may authorize individual workers to deviate from the requirements of §26.30(b)(1) and (2) provided:

(i) the licensee could not have reasonably foreseen or controlled the circumstances necessitating the deviation,

(ii) the operations shift manager, or a senior-level designee determines that the deviation is necessary to mitigate or prevent conditions adverse to safety, or the security shift manager determines that the deviation is necessary to maintain the security of the facility whether to grant work-hours deviations, taking into account the plant/security conditions and the physical condition of eh personnel being granted the deviation, and

(iii) a supervisor trained in the causes, symptoms, and effects of fatigue, performs an assessment in accordance with §26.32 and determines that the individual's fitness for duty will not be adversely affected by the additional work period to be authorized under the deviation and evaluates the need for compensatory measures.

**White Paper Number Four**  
**Work-Hour Deviation Documentation**  
**March 18, 2003**

**Purpose:** This draft section is designed to ensure individual work-hour deviations follow the prescriptive requirements in subpart (b) (3) by documenting the bases for granting the individual deviations from the requirements of 26.30 (b) (1) and (2).

**Issue:** (1) Although infrequent, non-safety or security related situations do arise in a plant that would be adequately compelling to justify granting individuals work-hour deviations. As a consequence, rigidly adhering to safety and/or security precursors as the only drivers for the thoughtful process of granting deviations significantly reduces licensee management prerogatives. If the process for granting follows an auditable path with required decision points reviewed by responsible plant management, the precursors to the decision should remain at the plant level.

(2) The attached form (Appendix A) provides guidance for plant staff to perform individual and task analyses, implement fatigue management strategies, as well as providing specific review and authorization points along a decision continuum. In addition, the completed form provides auditable documentation.

**Proposed Text:** (4) The basis for individual deviations from the requirements of §26.30(b)(1) and (2) shall be documented. The documented basis shall include:

(i) a description of the conditions or circumstances for which approval is requested

~~safety or security condition necessitating the work schedule extension,~~

(ii) the basis for ~~the determination that the individual's fitness for duty will not be adversely affected by the additional work period~~ approval of the deviation, including any measures taken to manage the potential for fatigue-related errors, and

(iii) ~~an assessment of the potential for fatigue related errors to affect the safe performance of the work and the use of any compensatory measures.~~ a completed fitness for duty assessment.

**White Paper Number Six**  
**Group Work-Hour Controls**  
**April 23, 2003**

**Purpose:** The purpose of this section is to provide reasonable assurance that individual work hours are tracked to preclude work-hours related effects on individual fitness for duty.

**Issue:** The cited section contains the word ensure in two locations. The language in 26.23 Performance Objectives clearly states that a fitness-for-duty program must provide reasonable assurance that worker fatigue is managed commensurate with maintaining public health and safety. Ensure denotes an absolute and, as a consequence, should be removed to maintain consistency throughout the rule. In addition, the terms alertness and performance are integral components of the overarching concept fitness-for-duty. These two stand-alone terms should be removed from the section, in favor of the term fitness-for-duty.

**Proposed Text:** 26.30 Work Scheduling Controls (C) Group Work-Hour Controls (e). Licensees shall monitor and control individual work hours to provide reasonable assurance ~~ensure that worker alertness and performance are fitness-for-duty is not~~ compromised. As a minimum, the plant manager, or designee, shall review individual hours actually worked on a quarterly basis to provide reasonable assurance ~~ensure that workers are not being~~ assigned hours that may compromise their fitness-for-duty. ~~alertness and performance.~~ This review will evaluate, by exception, those individuals with work hours in extreme when compared to the norm. Those individuals may be susceptible to the effects of cumulative fatigue, resulting in a potential compromise to their fitness-for-duty.

**White Paper Number Seven**  
**Defining Directing Work**  
**April 11, 2003**

**Purpose:** The draft rule requires that the work hour scheduling controls apply to personnel directing the operation or maintenance of structures, systems and components that a risk-informed evaluation process has shown to be significant to public health and safety. It is important that there be a clear and consistent understanding of what *directing* operation or maintenance means.

**Issue:** In the most recent version of draft part-26, the NRC provides a definition of directing that is simple and in many respects universal. There are two items that are understood, but should be specified so as not to leave any room for misunderstanding. These two items are the directing is to be conducted in real time, and the person directing is to be the one responsible for task completion

**Proposed Text for Definitions Section:** *Directing* means real-time, face-to-face supervision, by the person responsible for ~~of an~~ ongoing operational evolution or maintenance task.



**White Paper Number Eight**  
**Granting Work-Hour Deviations**  
**April 29, 2003**

**Purpose:** This draft section specifies the level of plant management that can determine and grant work-hours deviations for operations, maintenance and security personnel.

**Issue:** (1) The industry agrees that a senior-level plant manager should both determine whether a deviation is necessary and grant the deviation after pre-specified conditions have been met, focusing on both the work to be performed and the person(s) being granted the deviation. The industry does think, however, that by specifying only operations and security shift supervisors the pool of potential senior-level decision makers is limited. Suggested alternative language would generically specify senior-level plant decision-making personnel, with the requirement that approved senior-level titles be specified in individual plant procedures.

(2) Limiting work hour deviations exclusively to conditions (precursors) essentially out of the control of the licensee is too restrictive and eliminates any management discretion. It seems reasonable that after a comprehensive evaluation where there is reasonable assurance public health and safety will not be negatively affected by the granting of work-hours deviations, those deviations should be granted.

(3) Anchoring the decision process to the prevention of conditions adverse to safety limits the normal decision making process. Although infrequent, non-safety or security related situations do arise in a plant that would be adequately compelling to justify granting individuals work-hour deviations. As a consequence, rigidly adhering to safety and/or security precursors as the only drivers for the thoughtful process of granting deviations significantly reduces licensee management prerogatives. If the process for granting follows an auditable path with required decision points reviewed by responsible plant management, the precursors to the decision should remain at the plant level.

(4) Finally, compensatory measures should be indicated to the extent they provide reasonable assurance that risk-significant functions will not be affected by fatigue-related errors

**Proposed Text:** 26.30 Work Scheduling Controls, (b) Individual Work Hour Controls (3). Licensees may authorize individual workers to deviate from the requirements of §26.30(b)(1) and (2) provided:

(i) the licensee could not have reasonably foreseen or controlled the circumstances necessitating the deviation, or through an evaluation has determined there is reasonable assurance there will be no increased risk to public health and safety.

(ii) ~~The operations shift manager, or a site senior-level designee, with requisite signature authority, determines, that the deviation is necessary to mitigate or prevent conditions adverse to safety, or the security shift manager determines that the deviation is necessary to maintain the security of the facility after a thorough review of plant or security conditions, and a review of the fatigue/alertness levels of the personnel being considered, whether or not to grant a work-hour deviation.,~~ and (iii) a supervisor trained in the contributors, symptoms, and effects of fatigue assess the individual's fitness for duty and determines that there is reasonable assurance the individual's fitness-for-duty ~~it~~ will not be adversely affected by the additional work period to be authorized under the deviation. At a minimum, the assessment shall address the individual's work history for the past 7 days, the potential for fatigue-related errors to affect the safe performance of risk-significant functions the work, and whether any compensatory measures are being taken to establish reasonable assurance that any risk-significant functions will not be adversely affected. ~~the use of compensatory measures.~~

**White Paper Number Nine**  
**Documenting Individual Deviations**  
**April 11, 2003**

**Purpose:** To assure accuracy, the documentation of the requirements specified in 26.30 Work Scheduling Controls (b) (4) (i)-(iii), should follow absolutely the requirements in the authorization section (3) (i)-(iii).

**Issue:** The language in both sections (i) and (ii) is not wholly consistent with the requirements in the authorization section, and it essentially eliminates management discretion. Under (i), in-depth justification is required through the development of a description of circumstances causing the need for a work schedule extension to be unforeseen or uncontrollable. In the requirements section under (i), it states the licensee could not have *reasonably* foreseen or controlled the circumstances necessitating the deviation. A cogent description of the circumstances upon which a management decision is to be made, allows the exercise of an important management prerogative.

In the requirements section under (ii), it states that the operations shift manager determines that the deviation is necessary to mitigate or prevent conditions adverse to safety, or the security shift manager determines that the deviation is necessary to maintain the security of the facility. While the documentation section (ii) follows the authorization section, it again eliminates any management intervention and decision making outside the very prescriptive specifications.

**Proposed Text:** 26.30 Work scheduling Controls (b)(4) The basis for individual deviations from the requirements of §26.30(b)(1) and (2) shall be documented. The documented basis shall include:

(i) A statement of the scope of work for which the individual work limit extension is approved, ~~and a description of the circumstances causing the need for the work schedule extension to be unforeseen or uncontrollable,~~

(ii) the basis for the determination that the work schedule extension is necessary ~~to mitigate or prevent conditions adverse to safety or maintain the security of the facility,~~

(iii) the basis for the determination that the individual's fitness for duty will not be adversely affected by the additional work period to be authorized under the deviation, including the use of any compensatory measures.

**White Paper Number Ten**  
**Fatigue Evaluations**  
**April 21, 2003**

**Purpose:** To propose better integration of fatigue evaluations with existing site corrective action programs (CAP) and with the balance of the Worker Fatigue Rule.

**Issue:**

1. The proposed draft requires the licensee's procedures describe the process for self-declaration based on **fatigue, illness, or other impairing conditions**. Section 26.32 only focuses on the fatigue issue. Changes are suggested to make this section consistent with the intent of the policies and procedures section.
2. The section should be renamed, to more generally address fitness-for-duty issues, apart from drugs and alcohol.
3. The for-cause determination of fitness should only be conducted when there is reason to believe that illness, fatigue or other impairing conditions could be a contributor. For example, if the individual is being for-cause tested because of the smell of alcohol, it is unreasonable to conduct a fatigue assessment as would be required by the original wording.
4. Most self-declarations are/should be handled informally between the worker and supervisor. Every one of us has reported at some point we were sick and been sent home by a supervisor. A professional evaluation is not needed. In many cases were a worker is fatigued, any supervisor would agree and take appropriate action to remove the individual from duty. This section should only need to be invoked in those few cases where the cause of the impairment is not clear and the situation is in doubt. Note that the process for raising issues must be clearly defined in the site procedures (23.27(c)~~4~~) (4).
5. A post event determination of fitness should only be needed

when there is reasonable indication that there were conditions that affected the individual's fitness.

6. The evaluation process should be covered, by procedure, within a licensee's corrective action program.

### **26.27 Written policies and Procedures**

(c) Procedures. (4) Describe the process to be followed when a worker declares, while on duty, during a duty period that he or she is not fit for duty for reasons including illness, fatigue, or other potentially impairing conditions. The procedure shall describe individual and licensee responsibilities and require the establishment of controls and conditions under which the individual can perform work, if necessary.

(c)(4)(A) Require the establishment of standards to be utilized within the Licensee's corrective action program in the appraisal of Fitness for Duty Evaluations for reasons other than drugs and alcohol.

### **§26.32 Fitness for Duty Evaluations for reasons other than drug and alcohol ~~Fatigue Assessment~~**

**(a) While an individual is on duty, or when an individual is required to report to duty, Licensees shall evaluate and document, within the Licensee's corrective action program, conditions that could lead to a potential impact on an individual's Fitness for Duty Licensees shall assess workers for fatigue induced impairment in the following circumstances:**

**(1) For-cause. In response to any observed behavior or -physical condition that creates reasonable suspicion that an individual is not fit-for-duty, due to illness, fatigue, or other potentially impairing conditions that are not drug or alcohol related.**

**(2) Self-declaration. In response to a documented formal declaration by an individual that he or she is**

not fit for duty because of illness, fatigue, or other potentially impairing conditions not drug or alcohol related.

(3) Post-event. In response to events requiring post-event drug and alcohol testing as specified in §26.31(c)(3).

(b) Fitness for Duty Evaluations shall be performed by an appropriate member of the Licensee's management such that a timely identification of an anomaly within the Fitness for Duty Standards can be identified.

(1) Documentation of Fitness for Duty Evaluations will be maintained within the Licensee's corrective action program.

(2) The evaluation will determine, establish, and document all controls and conditions under which the individual may perform work, if necessary.

(c) Identified anomalies to Fitness for Duty Standards shall be forwarded the Licensee's Fitness for Duty program administrator to be assessed by Fatigue assessments shall be conducted by individuals trained in the symptoms, contributing factors, and effects of fatigue. The assessment shall address, as a minimum, the following factors:

(1) acute Acute fatigue;

(2) cumulative Cumulative fatigue; and

(3) circadian Circadian factors.

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**White Paper Number Eleven**  
**Defining Self Declaration**  
**April 23, 2003**

**Purpose:** The draft rule requires the industry to take particular action when a worker self declares that he/she is not fit for duty because of illness, fatigue or other impairing conditions which cannot be resolved by a supervisory evaluation. It is important that there be a clear and consistent understanding of what constitutes a self declaration to ensure consistency in rule development and implementation.

**Issue:** Without a clear and consistent definition, there is the potential for misunderstanding both at the licensee and regulatory levels.

**Proposed Text for Definitions Section:** Self declaration is a documented notification, by an employee covered under 10 CFR Part 26, to his/her supervisor, subsequent to a prior statement or notification that the he/she is not fit for duty, which effected a disagreement relative to the employee's disposition .

**White Paper Number Twelve**  
**Defining Self Declaration**  
**April 30, 2003**

**Purpose:** The draft rule requires the industry to take particular action when a worker self declares that he/she is not fit for duty because of illness, fatigue or other impairing conditions which cannot be resolved by a supervisory evaluation. It is important that there be a clear and consistent understanding of what constitutes a self declaration to ensure consistency in rule development and implementation.

**Issue:** Without a clear and consistent definition, there is the potential for misunderstanding both at the licensee and regulatory levels. Communications between supervisor and employee may involve issues of an employee's general wellness and availability to work. When these communications transition from a general discussion to a focused employee declaration of his/her fitness for duty, it is important that the involved parties unambiguously understand that this is the case.

Some issues of fitness, typically in the areas of employee fatigue or illness, are simply solved by mutually agreeing to reschedule the work or allowing the employee to recuperate. To avoid interference with this important routine employee/supervisor interaction, instances of cited self-declaration should be restricted to those cases where agreement cannot be reached and the employee feels compelled to formally declare that he/she is unfit for the required work.

**Proposed Text for Definitions Section:** Self declaration is a formal, unambiguous notification by an employee covered under 10CFR Part 26, to his/her supervisor that he/she is not fit for duty, concurrent with a formal notification by the supervisor that the employee is required to work.



**White Paper Number Thirteen**  
**Measuring Circadian Variations in Alertness and Performance**  
**July 28, 2003, 2003**

**Purpose:** The draft rule requires the industry to take particular action when assessing an individual's ability to work beyond published work-hour levels without being unduly affected by fatigue. An aspect of the requirement focuses on circadian variations that may affect worker alertness and performance. There have been many studies that have demonstrated that there is a natural pattern of sleep and wakefulness in many organisms. When circadian rhythms are disrupted human function can be affected, performance may be impaired, and a general feeling of debility may occur until realignment is achieved. Shift work may affect circadian rhythm and its effect on performance and sleep/wake cycles is an important consideration. Performance peaks have been found to vary according to the peaks in the circadian rhythm of a person's body temperature. There are wide individual differences in the magnitude and persistence of these effects across workers. Exact measurement of these effects in any individual, from which to make a defensible prediction of that person's performance is impractical. It is important that there be a clear and consistent understanding of all requirements in the rule, to reduce the potential for licensee or regulator misunderstanding. If circadian variability is to become a component in assessing an individual's ability to work beyond a particular time limit, then practical limitations on our knowledge require a general approach. The requirement should take into account that utility supervisory staff members are not clinicians and, as such, should only be required to apply broad knowledge of the potential impact of circadian variability on a worker's job-related during the time period specified.

**Issue:** Measuring variations in worker alertness as a precursor to ascertain fitness for duty falls outside general supervisory ability. Because circadian variability is an important consideration in the fitness for duty screening process, evaluating the potential for performance decrements and their impact on safety should be the goal of the supervisory evaluations. The proposed text for the definitions section should focus on the behavioral aspects of circadian variability and eliminate specifically citing alertness as a component.

**Proposed Text for 26.5 Definitions Section:** *Circadian variations in alertness and performance means the increases and decreases in individual cognitive/motor functioning as a product of human physiological processes (e.g., body temperature, release of hormones) that vary on an approximate 24-hour cycle.*

**White Paper Number Fourteen**  
**Reducing Overly Restrictive Work-Hours Deviation Authorization**  
**Requirements I**  
**July 28, 2003**

**Purpose:** The intent of the authorization requirements based solely on the licensee having not been able to reasonably foresee or control the circumstances necessitating the deviation is to ensure control of the deviation process to the extent practicable. The policy statement is provided also to control the use of deviations in lieu of adequate staffing, the approval of “bulk” deviations, and the “planned” use of deviations to complete a job scheduled to run beyond the work-hour limits of those assigned. There is agreement from the industry on the issues to be controlled; however, the up-front requirements restrict the decision process to the point of being counter productive with the potential to negatively affecting plant safety. Controls throughout the remainder of the policy statement are adequate to address the multifaceted intent of the draft up-front authorization requirements.

**Issue:** Being able to “prove” the grounds for granting work-hours deviations were reasonably unforeseen or uncontrollable will be exceptionally difficult, and made more so in context of plant situations where decisions, many times, must be made to address real-time issues. It is important to control the misuse of the individual worker deviation process; however it can be adequately controlled with adherence to the balance of the policy statement, including the quarterly program effectiveness reviews by senior plant personnel.

**Proposed Text for 26.30 (b) (3) (i): *Omit.***

**White Paper Number Fifteen**  
**Reducing Overly Restrictive Work-Hours Deviation Authorization**  
**Requirements II**  
**July 28, 2003, 2003**

**Purpose:** The intent of the authorization requirements limiting work-hours deviations to mitigating or preventing conditions adverse to safety and/or maintaining site security is to ensure control of the work-hours deviation process to the extent practicable. The policy statement is provided to control the use of work-hours deviations.

**Issue:** To allow only two branches in decision process to grant work-hours deviations significantly limits the ability of plant senior management to exercise informed judgment to grant work-hours extensions to address important plant issues beyond those related to safety and security. Work-hour deviations are expected infrequently and those beyond safety or security less frequent still. By not allowing operational flexibility, unintended consequences may materialize in the form of challenges to industrial safety or increases in the potential for “rushing” a job to stay within time constraints. The efficacy of the authorization requirements with respect to the third decision branch will be guaranteed by senior plant personnel performing the quarterly program effectiveness reviews. These effectiveness reviews will address number and types of deviations, as well as the documented reasons for granting each deviation.

**Proposed Text for 26.30 (b) (3) (ii):** ...an operations shift manager determines that the deviation is necessary to mitigate or prevent conditions adverse to safety, ~~or~~ a security shift manager determines that the deviation is necessary to maintain the security of the facility, ~~and~~ or a senior site manager responsible for operational decisions determines that a deviation is warranted to maintain plant or personnel stability.

**White Paper Number Sixteen**  
**Supervisory Assessment for Work-Hours Deviation Authorization**  
**June 11, 2003**

**Purpose:** The draft policy statement is designed to ensure the person who conducts the assessment of an individual's fitness-for-duty as an integral step in granting work-hours deviations is capable of evaluating the work and risk associated with the task and individual.

**Issue:** The draft language is in some instances too specific and in other too general relative to supervisor qualifications and assessment guidance. It is important to provide well defined guidance relative to supervisor qualifications and fitness evaluation parameters to ensure work-hour deviations do not jeopardize plant or individual safety or security.

**Proposed Text for 26.30 (b) (3) (iii):** ...a supervisor qualified to direct the work to be performed and trained in accordance with the requirements of this part, assesses the individual's fitness for duty and determines that there is reasonable assurance that the individual will be fit for duty for the additional work period to be authorized under the deviation. As a minimum, the assessment shall consider ~~address~~ the individual's work history for the past seven days, circadian variability during the deviation period, ~~variations in alertness and performance,~~ the potential for fatigue-related errors to affect the safe performance of the work and the need for any fatigue-mitigation ~~compensatory~~ measures.

**White Paper Number Seventeen**  
**Reducing Overly Restrictive Work-Hours Deviation Authorization**  
**Requirements**  
**August 29, 2003**

**Purpose:** The intent of the authorization requirements based solely on the licensee being able to show that the deviation is needed to maintain safety or security is to ensure control of the deviation process to the extent practicable. The policy statement is provided also to control the use of deviations in lieu of adequate staffing, the approval of "bulk" deviations, and the "planned" use of deviations to complete a job scheduled to run beyond the work-hour limits of those assigned. There is agreement from the industry on the issues to be controlled; however, the safety and security based requirements restrict the decision process to the point of being counter productive with the potential to negatively affecting plant safety. An additional authorization requirement is suggested that would reduce the restrictiveness of the "two-pronged" approach. The third authorization requirement would be to maintain overall stability of important plant and/or personnel activities (see Attachment A). Controls throughout the remainder of the policy statement are adequate to address the multifaceted intent of the draft safety and security based authorization requirements.

One of the most significant concerns expressed by the staff early in the process of informing the rulemaking was that some plants were giving "blanket" approvals to work extended hours during outage periods or other situations. The NEI task force agreed that this was not an appropriate practice. Deviations should include a face-to-face fitness for duty assessment that takes into consideration the specifics of the tasks to be accomplished during the extended hours. The NEI task force proposal includes an individual approval for each extension. This proposed approval involves two parts: (1) approval of the work to be performed by the specific individual(s), and (2) a fitness for duty check of the individual(s). The industry guidance document will expand on the intent of each of these approvals (see Attachment A). In addition, the NEI task force agrees that these approvals should be documented, and has not disagreed with the staff's desire to document the basis for the decision to grant the deviation and also to document any actions that are being taken to minimize the risk of errors due to fatigue. The draft approval process significantly strengthens the requirements and minimizes the potential for abuse because the potential work hour deviations are carefully considered by management and because

the individual's fitness for duty is checked prior to the expected work-hours variance.

The authorization criteria as written have the potential to negatively impact safety. For example, a senior plant manager may make the decision that it is in the best interest of safety to grant a deviation to an individual in order to complete a job that will allow a safety system to be returned to service. It may be difficult to prove that granting the deviation was required in order to mitigate or prevent conditions adverse to safety. Additional safety system unavailability may not have jeopardized the safety of the plant. It may be next to impossible to prove that avoidance of additional unavailability hours was necessary to mitigate or prevent conditions adverse to safety, but common sense and good business acumen would dictate that all things being equal (the person is truly fit to complete the task within the allotted deviation period, and an operable safety system is more useful than one out of service), a manager should have the flexibility to make a decision to maintain overall stability.

**Issue:** Being able to “prove” that the deviation is necessary to maintain safety or security is a daunting task at best, and made more difficult in context of plant situations where decisions, many times, must be made to address real-time issues. It is important to control the misuse of the individual worker deviation process; however, it can be adequately controlled with adherence to the balance of the policy statement, including the quarterly program effectiveness reviews by senior plant personnel. The real issue is whether the deviation will have an adverse impact on safety. If an individual is indeed fit for duty, then there would be no adverse impact on safety, and thus the suggested authorization criteria as written are overly restrictive.

**Proposed Text for 26.30 (c) (3) (i):** an operations shift manager determines that the deviation is necessary to mitigate or prevent conditions adverse to safety, or a security shift manager determines that the deviation is necessary to maintain the security of the facility, or a site senior-level manager with requisite signature authority makes either of the above determinations, and or determines that the deviation will not have an adverse impact on safety or security, and

**White Paper Number Eighteen**  
**Defining Directing**  
**August 29, 2003**

**Purpose:** In the definitions section of the proposed Worker Fatigue Rule, directing is defined such as to provide a concrete example of all pertinent attributes associated with a person or persons in the position of directing.

**Issue:** The most recent draft definition states: "Directing means on-site control of a function by a person responsible for the correct performance of that function." The definition lacks specificity and, therefore, may not be adequate to provide definitive guidance to personnel covered by the Worker Fatigue Rule. The concern is that the definition should not lead to the inclusion of levels of supervision beyond the individual providing direct control of the job. In public meetings, there seems to be no disagreement on the intent of this recommendation. The issue is clarity

**Proposed Text (Section 25.5 Definitions):** *Directing* means job-on-site control of a ~~function~~ work activity by a person directly involved, capable of making technical decisions and ultimately responsible ~~responsible for the correct performance of that work activity.~~function..

**White Paper Number Nineteen**  
**Self Declaration as a Defined Behavior**  
**August 29, 2003**

**Purpose:** To ensure all facets of fitness for duty are controlled, there is the necessity to afford individuals the open option to declare that, in their judgment, they are fit or unfit for duty. This process is referred to as Self Declaration in the definitions section of the current Draft Worker Fatigue Rule.

**Issue:** In recent discussions during stakeholder meetings, the definition of Self Declaration was questioned because it did not specify the negative; that is, self declaration has historically been associated with an individual declaring he/she is not fit for duty. After discussion with NRC staff members, it is clear the NRC intent is for an open declaration; that is, an individual has the option to declare he/she is fit or unfit for duty. This is made clear when an individual is screened for a work-hours extension and is asked if he/she is fit for duty.

Self Declaration appears in the draft rule on two occasions and in both the process to be followed is unequivocal. Having a definition of self declaration in the definitions section of the rule seems redundant and causes uncertainty, whereas the functional definitions in the body of the rule provide concrete guidance.

**Proposed Text for Definitions Section:** Since the term is referred to in only two places in the draft rule it is recommended, with the addition of clarifying language in Section 26.32 (b) (2), the definition of Self Declaration be eliminated.

**Section 26.27 (c) (4) Describe the process to be followed when**

**an individual makes a self declaration that he or she is not fit unable to safely and competently perform his or her duties for any part of a working tour for reasons including illness, fatigue, or other potentially impairing conditions and, subsequent to the declaration, the person is permitted or required to work during that working**



**tour. The procedure must describe the individual's and the licensee's responsibilities and require the establishment of controls and conditions under which the individual is permitted or required to perform work.**

**Section 26.32 (b) (2) In response to a self-declaration by an individual to his or her supervisor that he or she is not fit for duty to safely and competently perform duties for any part of the working tour because of fatigue. No fatigue assessment is required if the licensee restricts the individual from performing activities under this part for a minimum of 10 hours following the self declaration.**

**White Paper Number Twenty**  
**Routine Work Hours , Procedures and Controls to Ensure they are**  
**Maintained**  
August 29, 2003

**Purpose:** The purpose in the Worker Fatigue Rule of establishing, maintaining and implementing controls for routine work hours is to ensure covered workers are not impaired by fatigue due to work hours. The controls are designed to ensure fatigue does not impair covered workers include scheduling designed to address the number and duration of consecutive shifts and the minimum break periods between blocks of shifts.

**Issue:** During the August stakeholder meeting, the industry participants did not understand what was being required in Sections 26.30 (b) and (1). The major concern was an agreed-upon definition of routine work hours. The second concern, of equal importance, is the draconian requirement to establish, maintain, and implement controls for personnel performing job functions in 26.30 (a), and for routine work hour scheduling that addresses the number and duration of consecutive shifts and the minimum duration of break periods between blocks of shifts. Developing procedures to establish work-hour and shift scheduling parameters that are consistent with the objective of preventing impairment from fatigue due to work hours is less draconian and implementation guidance can be incorporated in the implementation document developed by the industry and endorsed by Regulatory Guide.

**Proposed Text:** Section 26.30 (b) Routine Work Hours. Licensees shall develop establish procedures to establish work-hour scheduling parameters that are consistent with the objective of preventing impairment from fatigue due to work hours, maintain, and implement controls for the routine work hours of for personnel performing the job functions identified in §26.30(a). Routine work hours are defined as those individual scheduled hours that conform to a general 48 hour weekly average. These procedures- eontrols must be adhered to implemented except if the conditions for an exemption are met as described in §26.30(d) and (e). At a minimum, licensees shall:

(1) Establish the process Establish, maintain, and implement controls for routine work hour scheduling that address the number and duration of consecutive shifts and the scheduled duration of break periods between

blocks of shifts. The process controls must be consistent with the objective of preventing impairment from fatigue due to work hours.

**White Paper Number Twenty One**  
**Work Hour Averaging and Actions**  
**August 29, 2003**

**Purpose:** Section 26.30 Work hours Controls (b) (3), sections (i) and (ii) are designed to ensure that personnel within any job function will not be impaired by fatigue due to work hours. The sections focus on short term [one averaging period for section (i)] and long term [two consecutive averaging periods (ii)] requirements to bring that job function back into 48 hour alignment.

**Issue:** It should be noted that both work scheduling and manpower issues can take the average beyond the 48 hour target. If the predominant factor is manpower, then being able to restore the average within the allotted time may be impossible if the lead/lag time for personnel within that job function eclipses the averaging period(s). For Example, if a licensee loses significant operator resources for an unexpected reason, then the lead time for replacement is well beyond the proposed averaging period.

Of particular concern is the language “take action to prevent recurrence.” It may be impossible to prevent recurrence given the general vicissitudes of personnel. The term corrective action to prevent recurrence has regulatory significance. Part 50 of the Code of Federal Regulations, Appendix B, Criterion XVI, distinguishes between conditions adverse to quality and significant conditions adverse to quality (SCAQ) by the actions required. Conditions adverse to quality are required to be identified and corrected. Significant conditions adverse to quality also require identification and correction. In addition, SCAQs require that corrective actions be taken to prevent their recurrence. It was noted by the AEC during rulemaking that the term SCAQ was added “to preclude the necessity of corrective action measures for those conditions adverse to quality which are rarely completely eliminated.” This consideration suggests that conditions which cannot reasonably be completely eliminated should not be considered SCAQ. Thus, it seems inappropriate to include language to take action to prevent recurrence. It is not, however, unreasonable to expect licensees to take action to restore the average as soon as reasonably possible.

Finally, licensees would be expected to enter such a situation in the database used for the corrective action program. Such conditions and actions taken to restore would be highly visible to inspectors. The level of significance of such issues should be determined by the significance determination process, and any regulatory actions needed in response should follow the NRC’s regulatory oversight process.

**Proposed Text:** Section 26.30 (b) (3) (i) If the average for any job function group exceeds 48 hours per person per week, the licensee shall take corrective action to restore the average to 48 hours or less within the next averaging period. Corrective action should address the fundamental cause for exceeding the 48 hour average, and take actions to prevent recurrence.

Section 26.30 (b) (3) (ii) If the average for any job function group exceeds, or is projected to exceed, 48 hours per person per week in any two consecutive averaging periods, the licensee shall:

- (1) take action to restore the average to 48 hours or less as soon as practicable,
- (2) action to restore should address the fundamental cause for exceeding the 48 -hour average, and take action to prevent recurrence, and
- (3) notify the NRC in writing.

**White Paper Number Twenty Two**  
**Monitoring**  
**August 29, 2003**

**Purpose:** In 26.30 section (g), the purpose is to ensure licensees monitor, on a quarterly basis the extent to which control of individual work hours has been consistent with the objective to provide reasonable assurance that: (1) fatigue due to work hours has not compromised worker fitness-for-duty; (2) the average for each job function group indicates adequate staffing for all jobs within the group; and, (3) take corrective action where necessary.

**Issue:** The existing language in the most recent draft Worker Fatigue Rule requires verification for both work hour controls and staffing adequacy. The industry believes the verb verify may be misinterpreted by the regulator at some point in time and may, therefore, place the licensee in jeopardy under 10 CFR 50.9 (Completeness and accuracy of information). Because the draft rule requires that corrective action be applied as indicated, the licensee need only assess the efficacy of the controls. Controls here focus on the individuals who may volunteer at an unacceptably high rate for overtime, subsets within job classifications showing a pattern indicative of low staffing levels, and waivers to augment the work hours and staffing data. The proof that the licensee is following the intent of the sections is in actions taken to address shortcomings highlighted by the assessment processes. In addition, the industry believes that to have a complete picture as to the effectiveness of work hours and staffing controls, it is important to review the work-hours deviations granted during the period.

**Proposed Text: Section 26.30 (g) (1-3) On a quarterly basis, Licensees shall; perform a review of work hours for individuals performing functions identified in 26.30 (a). The reviews shall be performed on at least a quarterly frequency. Licensees shall:**

1. review hours actually worked by individuals performing the functions identified in 26.30 (a), to maintain consistency with the objective of reasonable assurance that fatigue due to work hours does not compromise worker fitness-for-duty ~~verify that the control of individual work hours is consistent with the objective off reasonable assurance that fatigue due to work hours does not compromise worker fitness for-duty,~~
2. assess the staffing adquacy for all jobs within the group, by reviewing individual hours worked, focusing on work-hour patterns within job classifications indicating low staffing levels. ~~verify that the average for~~

~~each job function group indicates adequate staffing for all jobs within the group, and~~

3. review all work-hours deviations granted during the monitoring period to verify waivers granted have met program requirements, and take corrective action as indicated.

4. take corrective action as needed.