Comments on NEI 06-11 [Revision B], Managing Fatigue at Nuclear Power Reactor Sites

** The referenced page numbers for new Rev. B comments and unresolved Rev. A comments are from the Rev. B version of the guidance document.

Section 2.2 Applicability

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

The guidance on page 2 does not indicate that it may apply to contractors/vendors. Section 26.201 of the rule specifies that the requirements of Subpart I apply to the licensees and other entities identified in § 26.3(a) and, if applicable, § 26.3(d).

Comment/Recommendation: The guidance in this section should be revised to include the entities identified in § 26.3(d).

NEI Response: NEI-06-11 is an implementing document for managing fatigue at nuclear power reactor sites and applies to the licensees.

Comment/Recommendation: Resolved.

Section 2.2.1 Fatigue Management Program, With the Exception of Work Hour Controls

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

Comment/Recommendation: This section of the guidance should be removed. Section 26.3(a) establishes the required timing for implementation of the Subpart I requirements.

NEI Response: Section revised, applicability to plants transitioning from construction to operations to be resolved later.

Comment/Recommendation: Resolved.

Section 2.2.2 Work Hour Controls for Covered Individuals

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

1. NEI guidance on page 3 states:

- Performing the duties of a Fire Brigade member who is responsible for understanding the effects of fire and fire suppressants on safe shutdown capability. The Fire Brigade leader or person specifically trained for understanding the effects of fire and fire suppressants on safe shutdown capability is considered the person responsible for understanding the effects of fire and fire suppressants on safe shutdown capability. The remaining Fire Brigade members are not considered as the person(s) responsible for understanding the effects of fire and fire suppressants on safe shutdown capability.

Comment/Recommendation: For purposes of defining the fire brigade member subject to the work hour controls, the distinction between the Fire Brigade leader and other members who may be similarly qualified, should be made in terms of designation, rather than training.

NEI Response: Section has been revised.

Comment/Recommendation: Resolved.

2. NEI guidance on page 3 states:

   A risk informed conclusion is that there is no significant, calculated risk to the public due to any component being damaged or mis-operated prior to initial criticality, based on the lack of any substantial curie inventory in the core. Therefore, risk to public health and safety is considered to begin at initial criticality. The following four categories of covered individuals shall adhere to work hour controls on or before initial criticality:
   - Operations personnel
   - Maintenance personnel
   - Health Physics or Chemistry members of the on-site emergency response organization minimum shift

Comment/Recommendation: The guidance should be removed. Section 26.3(a) establishes the required timing of implementation.

NEI Response: Section revised, applicability to plants transitioning from construction to operations to resolved later.

Comment/Recommendation: Resolved.

3. Consistent with the previous comment, the staff proposes the deletion of the following item found on page 4 of NEI 06-11 [Revision A]:

   Implement the work hour controls for all other covered personnel on or before initial criticality.

NEI Response: Section revised, applicability to plants transitioning from construction to operations to resolved later.

Comment/Recommendation: Resolved.

Section 3 Definitions

Rev. B Comments:

1. Definition of *Risk informed evaluation process* –

Comment/Recommendation: The guidance should be revised to state that "*Risk-informed evaluation process* means an evaluation based on a probabilistic risk analysis approach such as the one used for compliance with the Maintenance Rule (Section 50.65(a)(4)) or other similar approach."

2. Definition of *Work hours* –

Comment/Recommendation: The fifth bullet of this definition should be revised by inserting "evaluated by the NRC" after "exercises."

Unresolved Rev. A Comments:

1. Definition of *on-site*

Comment/Recommendation: Revise the definition for *on-site* to mean within the owner-controlled area. In addition, NEI should prepare a definition for *off-site* to mean outside of the owner-controlled area.

NEI Response: The on-site definition is consistent with the applicability of this rule. Off-site definition is added.

Comment/Recommendation: The term *on-site* is used in Subpart I solely in conjunction with the term *directing.* The intent is to limit the applicability of the work hour controls in § 26.205 to individuals directing operations or maintenance activities from within the owner-controlled area. The guidance should be revised accordingly.

2. Definition of *maintenance* – The guidance definition of *maintenance* differs from the rule definition of this term.

Comment/Recommendation: During the public meeting the staff agreed to consider revising the rule definition upon review of written comments submitted by NEI.

NEI Response: Comments have been provided to the NRC and the definition revised.

Comment/Recommendation: The staff has revised the definition of maintenance as follows:

Maintenance - Maintenance means, for the purposes of § 26.4(a)(4), maintenance activities, including but not limited to, surveillance, post-maintenance testing, and corrective and preventative maintenance.

This definition is the same as that used in 10 CFR 50.65, Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants. The guidance should be revised consistent with this definition.

Resolved Rev. A Comments:

1. Definition of *directing* - On page 6, NEI has added "an operations or maintenance covered" to the definition of *directing*, as stated below.

> Directing means the exercise of control over ~~a~~ an operations or maintenance covered work activity by an individual who is directly involved in the execution of the work activity, and either makes technical decisions for that activity without subsequent technical review, or is ultimately responsible for the correct performance of that work activity.

Comment/Recommendation: The guidance should keep the definition of *directing* consistent with rule language. The staff recommends deleting the underlined portion of the definition. The NEI addition also appears in the following places in the guidance:

- Section 6.3, page 15
- Section 6.3, flow chart

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

2. Definition of *protected area* - On page 6, NEI has added "for security purposes" to the definition of *protected area*, as stated below.

> Protected area means an area encompassed by physical barriers and to which access is controlled for security purposes.

Comment/Recommendation: The guidance should keep the definition of *protected area* consistent with rule language. The staff recommends deletion of the underlined portion of the definition.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

3. Definition of *shift cycle* –

Comment/Recommendation: The guidance should be revised to delete the word "average" from the definition of *shift cycle*.

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

Section 5.1 Policy

Rev. B Comments:

None.

Unresolved Rev. A Comments:

Page 9, in item 6

Comment/Recommendation: In addition to reporting FFD concerns, the staff proposes that NEI also require the FFD policy to describe an individual's responsibility to maintain his or her fitness-for-duty and make a self-declaration if he or she is not fit to safely and competently perform his or her duties for any part of a working tour as a result of fatigue.

NEI Response: Incorporated.

Comment/Recommendation: The guidance should replace the last word of item 6 ("FFD") with "fit for duty."

Resolved Rev. A Comments:

None.

Section 5.2 Procedures

Rev. B Comments:

1. Page 9, list (a) through (f)

Comment/Recommendation: Outdent the left margin of bullets (c) through (f) to be consistent with (a) and (b). Also, the guidance should be revised to delete "that is required" from the end of (d).

2. Page 11, item 6

Comment/Recommendation: The wording for this item is confusing. The guidance should be revised to clarify the Requesting Supervisor's responsibility.

Unresolved Rev. A Comments:

Page 10, item 3, 3rd bullet

Comment/Recommendation: The guidance should emphasize that adherence to the work schedule is critical for optimal performance of individuals.

NEI Response: The third bullet addresses individual performance. The first bullet addresses review of schedule adherence. Section 15 has been revised to ensure this evaluation is emphasized.

Comment/Recommendation: The staff understands the guidance of third bullet to mean that evaluating the performance of the individual would be accomplished by evaluating the duration, frequency, and sequencing of hours worked by an individual. The third bullet should be clarified to indicate that review of schedule adherence and review of job performance are separate activities. In addition, the revisions to Section 15 do not fully respond to NRC's comment. See staff comments on Section 15 for further detail.

Resolved Rev. A Comments:

1. Page 11, under items 1, 2, 3 and 5

Comment/Recommendation: The phrase "work schedules" should be replaced with "successive shifts" to maintain consistency with § 26.205(c), or explain the basis for the current wording in the guidance.

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

2. Page 11, in the first and third bullets under item 3

Comment/Recommendation: Revise the guidance to delete the word "overtime."

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

3. Page 11, last paragraph

Comment/Recommendation: To ensure consistency with § 26.207(a)(1)(ii), the staff proposes replacing the term "capable" with "qualified," or provide the basis for the current wording.

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

4. Page 12, Item [5], first bullet

Comment/Recommendation: The guidance should be revised to recognize that not all licensees are covered by union contracts.

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

5. Page 12, penultimate bullet

Comment/Recommendation: The bullet lists "being available on-site for a face-to-face fatigue assessment when required." The staff proposes deletion of this bullet considering potential

liability concerns associated with an individual driving to a work site after a declaration that he or she is unfit for duty because of fatigue.

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

Section 6.2 Work Hour Controls for Covered Individuals

Rev. B Comments:

1. Page 13, third bullet

Comment/Recommendation: The guidance should more specifically define what type of verification activities should not be included.

2. Page 13, fifth bullet

Comment/Recommendation: These examples should be removed. Non-intrusive testing is a preventative maintenance function and therefore within the scope of maintenance as defined for the purposes of § 26.4(a)(4).

3. Page 13, sixth and seventh bullets

Comment/Recommendation: These examples should be removed. Whereas the work hour controls may not be applicable to the work described, the examples do not provide sufficient information to categorically exclude these activities. The work hour provisions of § 26.205 are applicable to individuals who are granted unescorted access to nuclear power plant protected areas and who are performing the duties specified in § 26.4(a), including maintaining or directing the maintenance of SSCs that a risk-informed evaluation process has shown to be significant to the protection of public health and safety.

4. Page 13, eighth bullet

Comment/Recommendation: The guidance should be revised to refer to work on a “risk significant system, structure or component” instead of “risk significant component.”

5. Pages 13-14, examples 1 and 2

Comment/Recommendation: Example 1 could be deleted as it provides little value beyond bullet 8 on page 13. Example 2 should be revised to indicate that individuals who do not have unescorted access to the plant’s protected areas would not be subject to the work hour controls.

Unresolved Rev. A Comments:

1. Page 13, first bullet

Comment/Recommendation: This guidance should be deleted or revised to indicate that the component is off-site.

NEI Response: There is not risk associated with work performed on a component removed from the system.

Comment/Recommendation: The work hour controls are applicable to individuals that maintain, or direct the maintenance of systems, structures, or components that a risk-informed evaluation process has shown to be significant to the protection of public health and safety. The staff considers the determination of whether a component meets this criteria to be based on the function that the SSC serves/is intended to serve, and is not to be determined using an instantaneous assessment of risk based on the status of the component (e.g., installed, not installed).

2. Page 13, second bullet

Comment/Recommendation: This guidance should be revised to indicate that these maintenance activities occur off-site.

NEI Response: There is not risk associated with work performed on a component removed from the system.

Comment/Recommendation: See final comment/recommendation for item 1, above.

Resolved Rev. A Comments:

Page 14, fourth bullet

Comment/Recommendation: The staff notes that it has received Commission direction to undertake a future rulemaking to incorporate quality control and quality assurance activities within the scope of activities subject work hour controls.

NEI Response: Noted.

Comment/Recommendation: Resolved.

Section 6.3 Directing

Rev. B Comments:

1. Page 14, first paragraph

Comment/Recommendation: This paragraph should include an introductory sentence stating that for the purposes of compliance with the rule text, directing only applies to operations and maintenance activities. This introductory sentence would precede the definition of directing, per the rule language.

2. Page 14, first paragraph

Comment/Recommendation: To be consistent with the definition of directing, the guidance should be revised to state “either” before the phrase “makes technical decisions for that activity” and “or” before the phrase “is ultimately responsible for the correct performance of that work activity.”

Unresolved Rev. A Comments:

1. Page 16, 12th solid bullet

Comment/Recommendation: Recommend deleting the bullet as it is duplicative of the 9th bullet.

NEI Response: Incorporated.

2. Pages 16-17, Examples 1-3

Comment/Recommendation: The examples should be revised to eliminate the detailed discussion of work schedule given that those details are not relevant to the determination of whether an individual is directing. Additional details should be added that address the elements of the definition of directing in order to determine whether or not the individuals are directing.

NEI Response: Incorporated.

Comment/Recommendation: The examples as written should be deleted as they do not clarify whether or not an individual is directing. If retained, the examples should de revised to eliminate the term *advising*. Explanation of why the individual is not directing by using terms from the definition of *directing* would provide greater assurance the guidance is consistent with the requirements of the rule.

Resolved Rev. A Comments:

1. Page 16, 9th solid bullet

Comment/Recommendation: The bullet should be deleted for the guidance revised to eliminate the concept of "advising" as it adds a new undefined term.

NEI Response: Incorporated.

Comment/Recommendation: The NRC accepts the term "recommendations."

2. Page 15, last bullet

Comment/Recommendation: It is not clear why directions provided as part of on the job training should not be considered "directing." The staff recommends deleting the bullet.

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

3. Pages 15-16

Comment/Recommendation: The staff proposes deleting the word "actively" because it adds a qualifier that is not part of the definition of directing.

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

4. Page 17, first bullet

Comment/Recommendation: The first bullet should be deleted. The rule does not categorically exclude any group of individuals from "directing."

NEI Response: Incorporated.

Comment/Recommendation: Resolved.

Section 7 Work Hours Scheduling

Rev. B Comments:

1. Page 18, first paragraph, last sentence

Comment/Recommendation: The last sentence in the first paragraph indicates that the section does not address the issue of scheduling overtime. The staff believes that for adhering to the concept of long-range predictability, the effects of scheduled and unscheduled overtime should be considered as part of this process (e.g., use of self-relieving crews).

2. Page 18, bullets

Comment/Recommendation: The work scheduling criteria should include the maximum and the average duration of a scheduled work week.

Unresolved Rev. A Comments:

1. Page 18

Comment/Recommendation: The guidance should be revised to be consistent with a performance-based interpretation of § 26.205(c). For example, a performance-based interpretation of § 26.205(c) would include the evaluation of actual hours worked compared to scheduled work hours or the evaluation of work hour scheduling relative to worker performance.

NEI Response: Incorporated, added to section 15 reviews.

Comment/Recommendation: Section § 26.205(c) is a performance-based requirement. The guidance in Section 7 should be clarified to indicate that the scheduling criteria listed in the bullets should be considered relative to the performance objective of preventing impairment from fatigue due to the duration, frequency, or sequencing of successive shifts. Specifically, the staff recommends that the sentence in the guidance leading into the scheduling criteria on page 18 state: "*When establishing schedules the following guidelines should be applied consistent with the performance objective of preventing impairment from fatigue due to the duration, frequency, or sequencing of successive shifts:*". Changes to section 15 will be addressed in the section 15 comments.

2. Page 18, bullets

Comment/Recommendation: The staff proposes that NEI revise its scheduling criteria to include the minimization of scheduled and unscheduled overtime due to normal variation in

vacation demand, training, and emergent work. Also, the established scheduling criteria should not allow using § 26.205(d) scheduling limits as the routine scheduling limits.

NEI Response: The NEI guidance allows scheduling within the rule requirements.

Comment/Recommendation: The limits in § 26.205(d) are not an acceptable criterion for meeting the performance objective of § 26.205(c). The first bullet should be deleted. There is a presumption that licensees will adhere to the rule requirements.

3. Page 18, 3rd from last bullet.

Comment/Recommendation: The bullet appears to imply that the only start time consideration is whether it is fixed or rotating. The actual start and end times can substantially affect sleep efficiency and are therefore important criteria regardless of whether shifts are fixed or rotating. The guidance should be revised to clarify that these are separate criteria.

NEI Response: Incorporated.

Comment/Recommendation: The guidance in this bullet mixes discussion of start times and fixed versus rotating shifts. The guidance should address shift start and end times as an independent factor when establishing work schedules. Shift start and end times can substantially affect sleep efficiency and are therefore important criteria regardless of whether shifts are fixed or rotating.

Resolved Rev. A Comments:

None.

Section 7.1 Periodic Overtime

Rev. B Comments:

Comment/Recommendation: The third paragraph of Section 7.1 indicates that supervisor overtime would not be subject to the averaging technique for determining the average duration of a shift and corresponding minimum day off requirements of § 26.205(d). This would be inconsistent with the requirements of the rule. The rule allows for exclusion of turnover time from the calculation of hours worked. Any work, whether covered or not, that does not meet the definition of shift turnover should be included in the calculation of work hours and in the determination of the average shift duration.

Unresolved Rev. A Comments:

Comment/Recommendation: The purpose of this guidance is unclear and as a result it is not apparent how the guidance supports compliance with the requirements of Subpart I. The stated purpose is to distinguish between periodic overtime and an actual change of shift. Does "change of shift" mean a change in shift schedule, shift duration, or both? It is not clear for which requirements this guidance is applicable. In addition, the guidance regarding supervisor work hours implies an accounting of work hours that may be inconsistent with § 26.205(b) of the rule. The staff recommends deleting Section 7.1 of the guidance.

NEI Response: The section states that assigning periodic overtime does not constitute a change in shift. This is a definition of the supervisors shift to eliminate confusion, accounting of hours shall be performed per the rule requirements.

Comment/Recommendation: The staff considers the section on periodic overtime to be unnecessary and potentially in conflict with the requirements of the rule. The minimum day off requirements of § 26.205(d) are based on the average duration of the shift and the definitions of shift durations described in § 26.5. A change in schedule will be deemed to have occurred if the average hours worked by an individual differs from the definition of the shift duration to which the individual is assigned. The applicable minimum day off requirements will be determined by comparing the average shift duration to the shift duration definitions in § 26.5. The guidance document should be revised accordingly.

Resolved Rev. A Comments:

None.

Section 7.2 Transitions Between Schedules

Rev. B Comments:

Page 20, second sentence

Comment/Recommendation: The staff recommends deleting the second sentence of Section 7.2 for consistency with comments on Section 7.1.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

None.

Section 7.3 Transitioning Onto a Shift

Rev. B Comments:

Comment/Recommendation: The final paragraph before Example 1 on page 21 uses two different terms (i.e., average days off and minimum days off) to refer to the same requirements. For consistency, the guidance should use only one of these terms.

Unresolved Rev. A Comments:

Comment/Recommendation: The guidance should be revised to address compliance with the minimum day off (MDO) requirements. For example, an individual transitioning onto a shift with higher MDO requirements would have sufficient days off in the seven days prior to the transition to meet the MDO requirements for new shift.

NEI Response: Incorporated

Comment/Recommendation: The revised guidance does not fully address the MDO requirements of § 26.205(d). Part 26 is intended to provide assurance that all personnel with access to plant protected areas are fit for duty. Subpart I imposes work hour controls on only a subset of those individuals. The distinction between workers subject to the work hour controls and those that are not (described in NEI 06-11 as covered and non-covered workers) is based, in part, on the differences between their respective duties and the potential for fatigue and degraded alertness to impact the ability of the individuals to perform those duties. Similarly, not all "covered" individuals have the same work hour controls because of such differences in duties and corresponding implications of fatigue for their ability to safely and competently perform their duties. As an example, the level of alertness necessary to safely and competently perform the duties of a nuclear plant security officer is greater than that might be required by a clerical worker performing duties with only an indirect nexus to safety.

The guidance should be revised to ensure that individuals transitioning from non-covered duties to covered duties, or transitioning from duties with less stringent minimum days off requirement to more stringent day off requirements (e.g., from maintenance to security), meet the minimum day off requirements for the new duties, at the time the individual assumes the new duties. For example, an individual transitioning to duties with more stringent MDO requirements would have sufficient days off (based on their new duties) in the seven days prior to the transition to meet the MDO requirements for their new duties.

Resolved Rev. A Comments:

None.

Section 7.4 Transitioning Between Groups or Into a Covered Group

Rev. B Comments:

None.

Unresolved Rev. A Comments:

Comment/Recommendation: The guidance should be revised to address compliance with the minimum day off (MDO) requirements. For example, an individual transitioning onto a shift with higher MDO requirements would have sufficient days off in the seven days prior to the transition to meet the MDO requirements for new group.

NEI Response: Section revised to require a look back for minimum days off requirements for the shift the worker was transitioning from. Requirements for the new group would be going forward.

Comment/Recommendation: See Comment/Recommendation for the *Unresolved Rev. A Comments* in Section 7.3.

Resolved Rev. A Comments:

None.

Section 7.6 Reset From Deviations

Rev. B Comments:

Last sentence of first paragraph

Comment/Recommendation: The staff recommends revising the last sentence of this paragraph from "deviations to the rule" to "deviations from the work hour requirements."

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

Comment/Recommendation: The guidance should be revised to address compliance with the minimum day off (MDO) requirements. For example, resetting from a deviation from the MDO requirements would occur when the individual has sufficient days off in the preceding seven days to meet the MDO requirements.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

Section 8.1 Calculating Hours Worked

Rev. B Comments:

1. Page 27, Example 1

Comment/Recommendation: In the second line of Example 1, the word "than" should be "then."

2. Page 27, Example 1

Comment/Recommendation: In the last full line of Example 1, "the all" should be "all the."

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

1. Page 27, Multiple Unit Outages

Comment/Recommendation: The guidance need not limit an individual to working on an outage schedule or an operating unit schedule for the duration of the outage if guidance is provided to ensure that individuals transitioning from the outage unit controls to the operating unit controls meet the intent of the operating unit MDO requirements at the time of the transition (e.g., would have sufficient days off in the seven days prior to the transition to meet the MDO requirements for the operating unit).

NEI Response: Deleted section

Comment/Recommendation: Resolved.

2. Page 27, Call-in work period

Comment/Recommendation: The staff recommends revising the guidance to allow licensees the option of (a) writing a waiver from the 10-hour break provision (i.e., if the work is necessary for plant safety or security) or (b) treat the individual's scheduled shift and the call-in period as a continuous work period (i.e., count work hours as the total hours from the beginning of the normal work period to the end of the call-in period).

NEI Response: Section has been rewritten.

Comment/Recommendation: Resolved.

3. Page 29, Example #1.

Comment/Recommendation: Revise the example consistent with comment 2, above.

NEI Response: Example corrected to revised section.

Comment/Recommendation: Resolved.

4. Page 30, Example #3.

Comment/Recommendation: The guidance should clarify that activities "initiated by the individual" means "not approved or initiated by the licensee." A work activity is "approved or initiated" by the licensee when it is directed, required, or otherwise assigned by the licensee.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

Section 8.3 Work Hour Controls During Outages

Rev. B Comments:

1. Page 31

Comment/Recommendation: The staff recommends that the guidance include the following options for managing the transition into an outage:

- Using shift cycles of less than six weeks in length;
- Changing shift duration;
- Using a rolling six week average;
- Averaging days off as described in Section 7.2 of the guidance.

Once these options are included, the example on page 31 should be revised accordingly.

2. Pages 32-34

Comment/Recommendation: This section of the guidance does not reflect NRC's interpretation of the rule that individuals performing duties associated with the operating unit are not eligible for the relaxation for individuals working on outage activities. The guidance should be revised accordingly. The guidance need not limit an individual to working on an outage schedule or an operating unit schedule for the duration of the outage if guidance is provided to ensure that individuals transitioning from the outage unit controls to the operating unit controls meet the intent of the operating unit MDO requirements at the time of the transition (e.g., would have sufficient days off in the seven days prior to the transition to meet the MDO requirements for the operating unit).

Unresolved Rev. A Comments:

1. Page 32. As stated by NEI during the December 13, 2007, public stakeholder meeting, virtually all workers at a site may work outage hours (even if working on the operating unit) because they all are supporting the outage effort, either directly or indirectly.

Comment/recommendation: The rule establishes more stringent requirements for operating units with the objective of ensuring that individuals are fit for maintaining the safety of the operating unit. The staff does not interpret the rule or understand the Commission's intent to allow outage work hour controls for personnel working on operating units.

NEI Response: The rule establishes restriction to provide assurance of a fit for duty worker in outages and normal power operation. The rule allows workers assigned to outage activities some exemptions from normal work hour restrictions for the short duration of the outage. Assignment of tasks to the work force remains a management prerogative.

Comment/Recommendation: Refer to the *Rev. B Comments* for Section 8.3.

2. Pages 31 and 33

Comment/Recommendation: The guidance in this section should be revised to be consistent with discussions held during the December 13, 2007, public stakeholder meeting. The staff understands that the guidance would allow for a short shift cycle periods immediately prior to and following an outage. In addition, the guidance should clarify that individuals will be subject to minimum day off requirements during those pre-outage and post-outage periods.

NEI Response: Section revised

Comment/Recommendation: Staff agrees with the deletion of the text removed from Section 8.3. However the change does not fully address the staff's comment. The guidance on these pages refers to periodic overtime. As noted in comments on Section 7.1, the staff does not consider the periodic overtime concept necessary for the transition into an outage or for returning to normal work hours. Section 8.3 should be revised accordingly.

3. Page 33

Comment/Recommendation: Guidance should be provided for scheduling individuals when returning to power from a planned outage consistent with the requirements in § 26.205(c).

NEI Response: Guidance is consistent with the rule.

Comment/Recommendation: The guidance is correct with respect to return to normal work hour limitation starts a new shift cycle (page 33). However, NRC expects that the hours actually worked by individuals would meet all the work hour requirements for the shift cycle. See prior comments on transitioning into an outage (*Rev. B Comments* for Section 8.3) and revise the guidance accordingly.

Resolved Rev. A Comments:

Bottom of page 35.

Comment/Recommendation: The discussion regarding documented statements made by individuals should be deleted as this discussion is repeated in section 8.4 on page 44.

NEI Response: Removed

Comment/Recommendation: Resolved

Section 8.4 Transitioning Between Outages

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

Page 44

Comment/Recommendation: Guidance should be revised in this section to address compliance with minimum days off requirements and maintain consistency with revised guidance in Sections 7 and 8.

NEI Response: Section Deleted

Comment/Recommendation: Resolved.

Section 9 Waivers

Rev. B Comments:

None.

Unresolved Rev. A Comments:

1. Page 37, item 3

Comment/Recommendation: The guidance appears to allow use of a check box to indicate a criterion was considered without the record providing any information regarding the actual conditions that were considered relative to the criterion (e.g., how many days were worked in the past 14 days). The guidance should be revised to allow the use of a check box as a means of documenting the actual conditions considered as part of the assessment.

NEI Response: Incorporated.

Comment/Recommendation: The guidance provides appropriate criteria for consideration. However, only checking a box for each area considered is not sufficient. The guidance should be revised to state that supervisors must document the actual conditions considered (e.g., actual number of hours worked, the individual's recent shift schedule, time of day work will be done, etc.).

Resolved Rev. A Comments:

1. Page 45, Step 3

Comment/Recommendations: This section of the guidance includes the term "supervisory evaluation," which differs from the rule term "supervisory assessment," as used in the rule. To avoid confusion, the guidance should be revised to use terminology consistent with the rule language.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

2. Page 46, item 3

Comment/Recommendation: The current guidance follows the rule text from § 26.207(a)(1)(ii), with the exception that it adds "experienced" to "qualified." The word "experienced" should be deleted to maintain consistency with rule language, or explain the basis for the current wording in the guidance.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

Section 10 Personnel Actions

Rev. B Comments:

None

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

Page 48

Comment/Recommendation: Further explanation regarding individual expectations concerning disciplinary consequences is necessary. What are the disciplinary actions (e.g., training, time off without pay, termination) an individual can anticipate under various circumstances? A list of considerations (e.g., prior work schedule, working conditions, and work performance history) for imposing disciplinary actions should be provided in this section. The section should provide sufficient information to communicate the responsibilities of both management and individuals.

NEI Response: Section revised

Comment/Recommendation: Resolved.

Section 11 Exceptions

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

Page 49

Comment/Recommendation: The exclusion pertaining to force-on-force exercises should be limited to NRC-evaluated force-on-force exercises.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

Section 12 Fatigue Assessments

Rev. B Comments:

None.

Unresolved Rev. A Comments:

Pages 42-45

Comment/Recommendation: Additional guidance should be added to the discussion of how to conduct and document fatigue assessments. This discussion should include examples of controls and conditions (e.g., mitigating alternatives) which allow the individual to resume his or

her duties. The guidance should provide licensees with more interpretations of the rule, rather than simply rule text.

NEI Response: [None]

Comment/Recommendation: The guidance has not been revised as recommended by the staff. The guidance should be revised as previously recommended.

Resolved Rev. A Comments:

None.

Section 12.2 Assessment Process

Rev. B Comments:

Page 44, item 2.

Comment/Recommendation: The staff recommends that the title of this item be revised to "Supervisory Assessment," rather than "Supervisory review."

Unresolved Rev. A Comments:

Page 44, last bullet

Comment/Recommendation: The use of a simple check box for supervisory assessment in conducting fatigue assessments is not sufficient. More specific and descriptive guidance should be included in review criteria in order to take into consideration the actual conditions affecting an individual's performance.

NEI Response: Check box removed.

Comment/Recommendation: This revision does not address the NRC's comment. The guidance provides appropriate criteria for consideration. However, only providing a statement for each area considered is not sufficient. The guidance should be revised to state that supervisors must document the actual conditions considered (e.g., actual number of hours worked, the individual's recent shift schedule, time of day work will be done, etc.).

Resolved Rev. A Comments:

None.

Section 13 Self Declarations

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

Comment/recommendation: This section should be clarified to indicate that it is the individual's responsibility to self-declare when an individual believes he or she is not fit for duty.

NEI Response: Incorporated

Comment/Recommendation: Resolved

Section 15 Reviews

Rev. B Comments:

1. Last line of first paragraph

Comment/Recommendation: The guidance should revise the word "define" to "defined."

2. Page 48, item 1

Comment/Recommendation: The guidance should not limit the review to information in the corrective action program.

Unresolved Rev. A Comments:

Page 48, item 1

Comment/Recommendation: This section should be revised to specify that evaluations of the effectiveness of the control of work hours should address actual worker performance.

NEI Response: Incorporated

Comment/Recommendations: The guidance should be clarified to ensure that reviews address workers' job performance. The final rule requires licensees to evaluate the performance of individuals to determine whether their abilities to safely and competently perform their duties have actually been compromised. The guidance should state that licensees shall review the actual work hours and performance of individuals for consistency with the objective of preventing impairment from fatigue the duration, frequency, and sequencing of hours worked by an individual.

Resolved Rev. A Comments:

None.

Section 17 Reporting

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

1. Page 58, item (a)

Comment/Recommendation: Guidance in this section should be revised to be consistent with the final version of the rule text, as follows (guidance – rule text differences are in bold):

> Guidance (a): The number of instances in which each work hour control specified in § 26.205(d)(1)(i) through (d)(1)(iii), (d)(2)(i) and (d)(2)(ii), and (d)(3)(i) through **(d)(3)(iv)** was waived for individuals not working on outage activities.
>
> Rule text: (i) The number of instances when each applicable work hour control specified in § 26.205(d)(1)(i) through (d)(1)(iii), (d)(2)(i) and (d)(2)(ii), and (d)(3)(i) through **(d)(3)(v)** was waived for individuals not working on outage activities.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

2. Page 58, item (b)

Comment/Recommendation: Guidance in this section should be revised to be consistent with the final version of the rule text, as follows:

> Guidance (b): The number of instances in which each work hour control specified in § 26.205(d)(1)(i) through (d)(1)(iii), (d)(2)(i) and (d)(2)(ii), (d)(3)(i) through **(d)(3)(iv)**, and **(d)(4)(i) and (d)(4)(ii)** was waived for individuals working on outage activities.
>
> Rule text: (ii) The number of instances when each applicable work hour (d)(3)(i) through **(d)(3)(v),** and **(d)(4) and (d)(5)(i)** was waived for individuals working on outage activities.

NEI Response: Incorporated

Comment/Recommendation: Resolved.

General

Rev. B Comments:

None.

Unresolved Rev. A Comments:

None.

Resolved Rev. A Comments:

1. Sections of guidance requiring elaboration.

   - Section 16 Records
   - Section 17 Reporting
   - Section 18 Audits

Comment/Recommendation: The guidance in these sections should expand upon the rule text itself. Currently these sections directly quote rule text and contain limited to no additional guidance.

Comment/Recommendation: Resolved.

2. Overall guidance requiring removal of material unrelated to the guidance itself.

Comment/Recommendation: The staff proposes that NEI remove general bases discussions that do not provide specific implementation guidance (e.g., discussions on pages 32-35 and 37-38).

Comment/Recommendation: Resolved.