



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 10, 2003

MEMORANDUM TO: Glenn Tracy, Director
Division of Nuclear Security Policy
Office of Nuclear Security
and Incident Response

FROM: Chris Nolan, Acting Chief */RA (Original Signed by M. Burrell for:)/*
Licensee Personnel Security Section
Division of Nuclear Security
Office of Nuclear Security
and Incident Response

SUBJECT: REVISED NOTICE CONCERNING PUBLIC MEETING TO
DISCUSS IMPLEMENTATION OF A DRAFT ORDER
REGARDING WORKER FATIGUE AT NUCLEAR POWER
PLANTS (ADAMS ACCESSION NUMBER ML030070505)

DATE AND TIME: January 23, 2002
7:30 A.M. - 5:00 P.M.

LOCATION: U.S. Nuclear Regulatory Commission
One White Flint North (OWFN 14B6)
11555 Rockville Pike
Rockville, Maryland

PURPOSE: To provide a public forum for stakeholders to participate in
discussions concerning implementation of a draft order
concerning worker fatigue at nuclear power plants. Attached are
the following: (1) agenda of specific topics for discussion at this
meeting, (2) draft order, (3) compensatory measures, and (4)
implementation guidance.

CATEGORY: This is a Category 2 meeting. The public is invited to participate
in this meeting by discussing regulatory issues with NRC at
designated points during the meeting. Feedback forms will be
distributed. Meeting summary with the list of participants will be
placed on a web page if one is established. NOTE: Some
portions of this meeting may be closed.

CONTACT: Garmon West, NSIR
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J. Persensky

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D. Lochbaum (UCS)
R. Meyer (PROS)
G. Jones (AFL/CIO)
D. Brian (POGO)
B. Quigley
D. Drobnich (National Sleep
Foundation)
B. Vila (DOJ)

- Attachments: 1. Meeting Agenda
2. Draft Order on Worker Fatigue
at Nuclear Power Plants

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OFFICE	LPSS/DNS*		LPSS/DNS*	E	DNS:D*	
NAME	G. West		C. Nolan (MRB for)		G. Tracy (JWS for)	
DATE	01/08/03		01/09/03		01/10/03	

"C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

OFFICIAL RECORD COPY

MEETING WITH STAKEHOLDERS TO DISCUSS IMPLEMENTATION OF A DRAFT ORDER
CONCERNING WORKER FATIGUE AT NUCLEAR POWER PLANTS

January 23, 2003

AGENDA

REGISTRATION AT ONE WHITE FLINT NORTH (ROOM 14B6) (ADAMS ACCESSION NUMBER ML030070505)	07:30am-08:30am
INTRODUCTIONS AND OPENING REMARKS	08:30am-08:45am
<ul style="list-style-type: none">• Purpose, need and objectives for the workshop.• SRM for the Draft Order.• Format and procedures for participation in the workshop.	
BACKGROUND	08:45am-10:15am
<ul style="list-style-type: none">• Current regulatory framework concerning worker fatigue.• Recent NRC actions to enhance security.• Review of work scheduling concerns and current work scheduling practices.	
BREAK	10:15am-10:30am
PRESENTATION OF DRAFT ORDER, COMPENSATORY MEASURES FOR FATIGUE, AND IMPLEMENTATION GUIDANCE	10:30am-12:00pm
<ul style="list-style-type: none">• Scope of personnel covered by the draft fatigue Order.• Work scheduling control.	
BREAK FOR LUNCH	12:00pm-01:00pm
CONTINUATION...PRESENTATION OF DRAFT ORDER, COMPENSATORY MEASURES FOR FATIGUE, AND IMPLEMENTATION GUIDANCE	01:00pm-04:30pm
<ul style="list-style-type: none">• Self declaration procedures.	
BREAK	02:00pm-02:15pm
<ul style="list-style-type: none">• Fatigue mitigation controls.• Implementation Guidance for the draft Order.	02:15pm-04:30pm
CLOSING REMARKS BY NRC	04:30pm-05:00pm
<ul style="list-style-type: none">• Summation of major concerns.• Schedule of future actions.	

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	Docket Nos. (as shown in Attachment 1)
ALL OPERATING POWER REACTOR LICENSEES)	License Nos. (as shown in Attachment 1)
)	EA-02-026

**ORDER MODIFYING LICENSES
(EFFECTIVE IMMEDIATELY)**

I.

The licensees identified in Attachment 1 to this Order hold licenses issued by the U.S. Nuclear Regulatory Commission (NRC or Commission) authorizing operation of nuclear power plants in accordance with the Atomic Energy Act of 1954 and Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50. Commission regulations at 10 CFR 50.54(p)(1) require these licensees to maintain safeguards contingency plan procedures in accordance with 10 CFR Part 73, Appendix C. Specific safeguards requirements for reactors are contained in 10 CFR 73.55.

II.

On September 11, 2001, terrorists simultaneously attacked targets in New York, N.Y., and Washington, D.C., utilizing large commercial aircraft as weapons. In response to the attacks and intelligence information subsequently obtained, the Commission issued a number of Safeguards and Threat Advisories to its licensees in order to strengthen licensees' capabilities and readiness to respond to a potential attack on a nuclear facility. On February 25, 2002, the Commission issued Orders to the licensees of operating power reactors to put the actions taken in response to the Advisories in the established regulatory framework

and to implement additional security enhancements which emerged from the NRC's ongoing comprehensive security review.

Work hour demands on nuclear facility security force personnel have increased substantially over the past 15 months and the current threat environment continues to require heightened security measures. Therefore, the Commission has determined that the security measures addressed by the enclosed compensatory measures are required to be implemented by licensees as prudent, measures to address issues that may arise from work-hour related fatigue of nuclear facility security force personnel. Therefore, the Commission is imposing requirements, as set forth in Attachment 2 of this Order, on all licensees of these facilities. These requirements, which supplement existing regulatory requirements, will provide the Commission with reasonable assurance that the public health and safety and common defense and security continue to be adequately protected in the current threat environment. These requirements will remain in effect until the Commission determines otherwise.

In order to provide assurance that licensees are implementing prudent measures to achieve a consistent level of protection, all licenses identified in Attachment 1 to this Order shall be modified to include the requirements identified in Attachment 2 to this Order. In addition, pursuant to 10 CFR 2.202, the NRC finds that in the circumstances described above, the public health, safety and interest require that this Order be immediately effective.

III.

Accordingly, pursuant to Sections 103, 104, 161b, 161j, 161o, 182 and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202 and 10 CFR Parts 50, 72, and 73, IT IS HEREBY ORDERED, **EFFECTIVE IMMEDIATELY**,

THAT ALL LICENSES IDENTIFIED IN ATTACHMENT 1 TO THIS ORDER ARE MODIFIED AS FOLLOWS:

- A. All Licensees shall, notwithstanding the provisions of any Commission regulation or license to the contrary, comply with the requirements described in Attachment 2 to this Order except to the extent that a more stringent requirement is set forth in the Licensees' security plans. The Licensees shall immediately start implementation of the requirements in Attachment 2 to the Order and shall complete implementation **no later than [insert date 60 days from the date of issuance]**.
- B. 1. All Licensees shall, within **twenty (20) days** of the date of this Order, notify the Commission, (1) if they are unable to comply with any of the requirements described in Attachment 2, (2) if compliance with any of the requirements is unnecessary in their specific circumstances, or (3) if implementation of any of the requirements would cause the Licensee to be in violation of the provisions of any Commission regulation or the facility license. The notification shall provide the Licensee's justification for seeking relief from or variation of any specific requirement.
2. Any Licensee that considers that implementation of any of the requirements described in Attachment 2 to this Order would adversely impact safe operation of the facility must notify the Commission, within **twenty (20) days** of this Order, of the adverse safety impact, the basis for its determination that the requirement has an adverse safety impact, and either a proposal for achieving the same objectives specified in the Attachment 2 requirement in question, or a schedule for modifying the facility to address the adverse safety condition. If neither approach is appropriate, the Licensee must supplement its response to

Condition B.1 of this Order to identify the condition as a requirement with which it cannot comply, with attendant justifications as required in Condition B.1.

- C. 1. All Licensees shall, within **twenty (20) days** of the date of this Order, submit to the Commission, a schedule for achieving compliance with each requirement described in Attachment 2.
- 2. All Licensees shall report to the Commission when they have achieved full compliance with the requirements described in Attachment 2.
- D. Notwithstanding the provisions of 10 CFR 50.54(p) and 72.186(b), all measures implemented or actions taken in response to this Order shall be maintained until the Commission determines otherwise.

Licensees' responses to Conditions B.1, B.2, C.1, and C.2 above, shall be submitted in accordance with 10 CFR 50.4 or 72.4 as applicable. In addition, Licensees' submittals that contain Safeguards Information shall be properly marked and handled in accordance with 10 CFR 73.21.

The Director, Office of Nuclear Reactor Regulation may, by letter, relax or rescind any of the above conditions upon demonstration by the Licensee of good cause.

IV.

In accordance with 10 CFR 2.202, the Licensee must, and any other person adversely affected by this Order may, submit an answer to this Order, and may request a hearing on this Order, within twenty (20) days of the date of this Order. Where good cause is shown, consideration will be given to extending the time to request a hearing. A request for extension of time in which to submit an answer or request a hearing must be made in writing to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and include a statement of good cause for the extension. The answer

may consent to this Order. Unless the answer consents to this Order, the answer shall, in writing and under oath or affirmation, specifically set forth the matters of fact and law on which the Licensee or other person adversely affected relies and the reasons as to why the Order should not have been issued. Any answer or request for a hearing shall be submitted to the Secretary, Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, ATTN: Rulemakings and Adjudications Staff, Washington, DC 20555. Copies also shall be sent to the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555; to the Assistant General Counsel for Materials Litigation and Enforcement at the same address; to the Regional Administrator for NRC Region I, II, III, or IV, as appropriate for the specific facility; and to the Licensee if the answer or hearing request is by a person other than the licensee. Because of possible disruptions in delivery of mail to United States Government offices, it is requested that answers and requests for hearing be transmitted to the Secretary of the Commission either by means of facsimile transmission to 301-415-1101 or by e-mail to hearingdocket@nrc.gov and also to the Office of the General Counsel either by means of facsimile transmission to 301-415-3725 or by e-mail to OGCMailCenter@nrc.gov. If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his interest is adversely affected by this Order and shall address the criteria set forth in 10 CFR 2.714(d).¹

If a hearing is requested by the Licensee or a person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing shall be whether this Order should be sustained.

¹The most recent version of Title 10 of the *Code of Federal Regulations*, published January 1, 2002, inadvertently omitted the last sentence of 10 CFR 2.714 (d) and paragraphs (d)(1) and (d)(2) regarding petitions to intervene and contentions. For the complete, corrected text of 10 CFR 2.714 (d), please see 67 FR 20884; April 29, 2002.

Pursuant to 10 CFR 2.202(c)(2)(i), the Licensee may, in addition to demanding a hearing, at the time the answer is filed or sooner, move the presiding officer to set aside the immediate effectiveness of the Order on the ground that the Order, including the need for immediate effectiveness, is not based on adequate evidence but on mere suspicion, unfounded allegations, or error.

In the absence of any request for hearing, or written approval of an extension of time in which to request a hearing, the provisions specified in Section III above shall be final twenty (20) days from the date of this Order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section III shall be final when the extension expires if a hearing request has not been received. AN ANSWER OR A REQUEST FOR HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS OF THIS ORDER.

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Dated this day of

Attachments: 1. List of Addressees
2. Compensatory Measures

Compensatory Measures

A. Background:

These compensatory measures (CMs) are established to delineate licensee responsibility in response to the threat environment presently in existence in the aftermath of the events of September 11, 2001. These excessive work schedules would challenge the ability of security force personnel to remain vigilant and effectively perform their duties.

B. Scope:

Operating nuclear power reactor licensees shall comply with the following CMs to ensure, in part, that security personnel are not assigned to duty while in a fatigued condition that could reduce their alertness or ability to perform functions necessary to identify and respond to plant security threats promptly. The CMs listed in section C below apply to security personnel performing the functions of: designated unarmed watchpersons, armed responders, armed guards, central alarm station operators, secondary alarm station operators, armed escorts, security shift supervisors, personnel performing access control duties, and individuals performing compensatory measures.

C. Compensatory Measures:

1. Work Scheduling Controls - Establish work scheduling controls in accordance with the following limits:

(a) For threat conditions through "elevated", implement schedules that do not exceed a 12-hour day, nominal 48-hour work week.

(b) For threat conditions above "elevated" or plant conditions that necessitate security force scheduling greater than that prescribed in C.1(a), work hours for periods up to 45 days shall be limited in accordance with the following criteria:

Individuals shall not work more than:

16 hours in any 24-hour period,
24 hours in any 48-hour period, and
72 hours in any 7-day period, all excluding shift turnover time.

A break of at least 8 hours shall be allowed between work periods (including turnover time).

For circumstances that the licensee cannot reasonably foresee or control, the security shift supervisor may authorize individuals to exceed the limits of C.1(a) or C.1(b) if necessary to maintain plant security. In such circumstances, licensees shall document and limit, to the extent practicable, the number and duration of authorizations that exceed the limits.

- (c) For threat conditions above “elevated” or plant conditions that necessitate augmented work hours or augmented staffing for periods longer than 45 days and up to 120 days, the licensee shall implement and adhere to schedules that include a continuous 48-hour break for each individual in any 7-day period and meet the requirements of C.1(b).
- (d) For threat conditions above “elevated” or plant conditions that necessitate augmented work hours or augmented staffing greater than 120 days, the licensee shall take prompt action to implement schedules in accordance with C.1(a).
2. Self-Declaration Procedures - Establish procedures for handling self-declarations of excessive fatigue consistent with the requirements of 10 CFR Part 26, “Fitness-For-Duty Programs,” and 10 CFR 50.7, “Employee Protection.”
 3. Fatigue Mitigation Controls - Implement fatigue mitigation controls for security force supervisors and personnel. As a minimum these controls shall include fatigue mitigation training and effectiveness monitoring.

Implementation Guidance

C.1 Work Scheduling Controls:

Threat conditions are referenced to the Homeland Security Advisory System as discussed in Regulatory Issue Summary 2002-12A, "Power Reactors NRC Threat Advisory and Protective Measures System," dated August 19, 2002. The controls on work scheduling specified in CM C.1(b) may be invoked only in circumstances where needed in order to respond to threat conditions or plant operational conditions.

The controls on work scheduling specified in CMs C.1(b) and C.1(c) should be treated as a single cycle of approximately 6 months which encompasses initially high levels of work hours, followed by reduced levels of work hours, followed by a return to nominal schedules. This cycle resets: 1) after 6 months, or 2) after completion of a full rotation (4 weeks) on a nominal shift schedule, whichever occurs first. Within the 6-month cycle, licensees are encouraged to return to nominal schedules as the threat or plant conditions allow. However, if multiple initiating events or recurring plant conditions require re-imposition of the limits of CM C.1(b) before resetting the cycle, licensees should re-enter the cycle at the point where nominal scheduling was resumed. For example, if an employee had worked the high level scheduling of CM C.1(a) for 30 days before nominal scheduling was resumed and the threat or plant conditions require a quick return to high level scheduling, that employee should be rescheduled at the high level of CM C.1(b) for 15 days (not 45 days) followed by transition to the reduced levels of CM C.1(c) for 120 days and subsequently returned to a nominal schedule in accordance CM C.1(d).

A nominal work week is calculated as the average number of hours scheduled in a 7-day period during a complete shift rotation of not greater than 6 consecutive weeks. This is based on a schedule using a 12-hour fixed shift in, typically, a repeating series of 36 and 48 hour work weeks or a series of 4 days on duty followed by 4 days off duty.

Circumstances that cannot be reasonably foreseen or controlled by the licensee include, but are not limited to, the failure of personnel to report for duty without advance notification because of sudden illness or inclement weather. Licensees' authorizations of work hour limit extensions are to be used for rare and exceptional events, and are not to be used as a routine administrative practice to compensate for security staff size. Documentation of authorizations should include the bases on which the authorization was approved.

Acceptable actions to limit the number and duration of authorizations to exceed the limits vary with the circumstances. The range of acceptable actions could include calling in substitute or backup personnel, modifying or adjusting shift schedules, or initiating supplemental hiring.

The requirement for a 48-hour break of C.1(c) supersedes the limit of 72 hours in any seven day period of C.1(b).

For those work periods covered by C.1(a), not greater than 10 percent unscheduled work hours, on a yearly basis, is considered acceptable.

C.2 Self-Declaration Procedures:

For applicable guidance, see NRC Regulatory Issue Summary (RIS) 2002-07, "Clarification of NRC Requirements Applicable to Worker Fatigue and Self-Declarations of Fitness-For-Duty," dated May 10, 2002.

C.3 Fatigue Mitigation Controls:

Implementation of fatigue mitigation controls for security force supervisors and personnel may be accomplished by: (a) establishing the controls within existing fitness for duty programs established in accordance with 10 CFR Part 26, or (b) establishing the controls within site security procedures established in accordance with 10 CFR Part 73, "Physical Protection of Plants and Materials." Regardless of the method used, the controls shall include:

(a) Fatigue Mitigation Training -

Provide training to mitigate the effects of fatigue for security force supervisors and personnel. This training should ensure that security force supervisors and personnel understand: (1) the performance effects of fatigue, (2) effective strategies and personal responsibility for obtaining adequate rest, (3) behavioral observation methods appropriate for the detection of personnel impaired by fatigue, and (4) practical measures to identify and mitigate task, scheduling, and environmental factors that induce decreased alertness.

(b) Effectiveness Monitoring -

Monitor the effectiveness of fatigue mitigation measures and implement corrective actions, as necessary. Acceptable measures for effectiveness monitoring include: (1) the results of behavioral observations performed pursuant to 10 CFR Part 26, "Fitness for Duty Programs," (2) reported concerns regarding fatigue of security personnel, (3) self-declarations of fatigue by security personnel, (4) personnel actions pertaining to the ability of security personnel to remain alert, and (5) occurrences when the work scheduling limits of C.1(b) were exceeded.