

professionalism by both management and plant operators.

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SUPPLEMENTARY INFORMATION:

Background

It is essential that control room operators are (1) well trained and qualified, (2) physically and mentally fit to carry out their duties, and (3) attentive to plant status relevant to their responsibilities to ensure the continued safe operation of nuclear facilities. It is also essential that management at each nuclear power reactor facility establish and maintain a professional working environment in which the licensed operator may be fully successful in discharging his or her safety responsibilities.

On a number of occasions, the NRC has received reports and has found instances of operator inattentiveness and unprofessional behavior in control rooms of some operating facilities. Reported instances include: (1) Licensed operators observed to be apparently sleeping while on duty in the control room or otherwise being inattentive to their license obligations, (2) operators using entertainment devices (for example, radios, tape players, and video games) in the control room in a way that might distract their attention from required safety-related duties, and (3) unauthorized individuals being allowed to manipulate reactivity controls. Such conduct is unacceptable and inconsistent with the operators' licensed duties.

The Commission has previously addressed its expectations of operator conduct in Commission regulations and regulatory guidance. Under 10 CFR 50.54(k), "An operator or senior operator licensed pursuant to Part 55 of this chapter shall be present at the controls at all times during the operation of the facility."¹ The continuous presence of a senior operator in the control room to ensure that the operator at the controls is able to perform the actions and/or mitigate an accident is required by § 50.54(m)(2)(iii). Commission regulations in 10 CFR Part 55 establish

¹ Copies of *Title 10, Code of Federal Regulations, Parts 0 to 50 and Parts 51 to 199* (revised January 1, 1988), may be purchased from the Superintendent of Documents, U.S. Government Printing Office, by calling (202) 275-2060 or by writing to the U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies may also be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. A copy of 10 CFR is available for inspection and/or copying for a fee in the NRC Public Document Room, 2120 L Street NW, Washington, DC.

standards for licensing nuclear power plant operators.

The Commission has addressed operator training and qualifications and fitness-for-duty in policy statements.² The policy statement on training and qualifications endorsed the Institute of Nuclear Power Operations (INPO)-managed Training Accreditation Program. The policy statement on fitness for duty endorsed the concept that the workplace at nuclear power plants is to be drug and alcohol free. Fitness-for-duty rulemaking is under consideration by the Commission.³

Guidance regarding the conduct of licensed operator and control room operations has been addressed in an NRC Circular and in NRC Information Notices.⁴ Specifically, IE Information Notice 79-20, Revision 1, emphasized that only licensed operators are permitted to manipulate controls (10 CFR 50.54(i)) and that a licensed operator is required to be present at the controls during facility operation (10 CFR 50.54(k)). IE Circular 81-02 provided the following guidance: (1) Knowledge of the plant's status must be ensured during shift changes by a formal watch turnover and relief, (2) licensed operators must be alert and attentive to instruments and controls, (3) potentially distracting activities in the control room must be prohibited, (4) access to the control room must be limited, and (5) eating and training activities should not compromise operator attentiveness or a professional atmosphere. Information Notice 85-53 reiterated the guidance of IE Circular 81-02.

In Information Notice 87-21, the NRC informed all nuclear power reactor facilities and licensed operators about certain licensed operators observed to be apparently sleeping while on duty. The notice reaffirmed the necessity for high standards of control room professionalism and operator attentiveness to ensure safe operation of nuclear power facilities. Further, Information Notice 88-20 reiterated the concern about unauthorized individuals manipulating controls and performing control room activities.

The Commission is aware that the industry has taken action to foster the development of professional codes of conduct by operators and has worked

² Policy Statement on Training and Qualification of Nuclear Power Plant Personnel (50 FR 11147, March 20, 1985; and amended 53 FR 46603, November 18, 1988) and Policy Statement on Fitness for Duty of Nuclear Power Plant Personnel (51 FR 27921, August 4, 1986).

³ Proposed Rule on 10 CFR Part 28 Fitness-for-Duty Programs (53 FR 36795, September 22, 1988).

⁴ IE Circular 81-02, dated February 9, 1981; Information Notice 79-20, Revision 1, dated September 7, 1979; Information Notice 85-53, dated July 12, 1985; Information Notice 87-21, dated May 11, 1987; and Information Notice 88-20, dated May 5, 1988 (available at the NRC Public Document Room at 2120 L Street, NW., Washington, DC).

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10 CFR Parts 50 and 55

Policy Statement on the Conduct of Nuclear Power Plant Operations

AGENCY: Nuclear Regulatory Commission.

ACTION: Final policy statement.

SUMMARY: This policy statement is being issued to make clear the Commission's expectation of utility management and licensed operators with respect to the conduct of nuclear power plant operations. The Commission believes that it is essential that utility management at each nuclear power reactor facility establish and maintain a professional working environment with a focus on safety in control rooms and throughout the plant. The Commission also believes that each individual licensed by the NRC to operate the controls of a nuclear power reactor must be keenly aware that he or she holds the special trust and confidence of the American people, conferred through the NRC license, and that his or her first responsibility is to assure that the reactor is in a safe condition at all times. This policy statement specifically describes the Commission's expectations of utility management and licensed operators in fulfilling NRC regulations and prior guidance regarding the conduct of control room operations.

The policy statement further provides the Commission's endorsement of industry initiatives to enhance

toward establishing management principles for enhancing professionalism of nuclear personnel. The Commission believes that such an operator code of conduct developed by operators and supported by utility management can contribute to operator professionalism and commends the industry and especially the operators who contributed to these efforts. The Commission encourages and supports the prompt and effective implementation of these industry initiatives at each licensed power reactor.

The Commission has decided to issue this policy statement to help foster the development and maintenance of a safety culture at every facility licensed by the NRC, and to make clear its expectations of utility management and licensed operators in fulfilling NRC regulations and prior guidance regarding the conduct of control room operations.

Policy Statement

The Commission believes that the working environment provided for the conduct of operations at nuclear power facilities has a direct relationship to safety. Management has a duty and obligation to foster the development of a "safety culture" at each facility and to provide a professional working environment, in the control room and throughout the facility, that assures safe operations. Management must provide the leadership that nurtures and perpetuates the safety culture. In this context, the term "safety culture" is defined as follows:

The phrase 'safety culture' refers to a very general matter, the personal dedication and accountability of all individuals engaged in any activity which has a bearing on the safety of nuclear power plants. The starting point for the necessary full attention to safety matters is with the senior management of all organizations concerned. Policies are established and implemented which ensure correct practices, with the recognition that their importance lies not just in the practices themselves but also in the environment of safety consciousness which they create. Clear lines of responsibility and communication are established; sound procedures are developed; strict adherence to these procedures is demanded; internal reviews are performed of safety related activities; above all, staff training and education emphasize the reasons behind the safety practices established, together with the consequences for safety of shortfalls in personal performance.

These matters are especially important for operating organizations and the staff directly engaged in plant operation. For the latter, at all levels, training emphasizes the significance of their individual tasks from the standpoint of basic understanding and knowledge of the plant and the equipment at their command, with special emphasis on the reasons underlying safety limits and the safety consequences of violations. Open attitudes are required in such staff to ensure that information relevant to plant safety is

freely communicated: when errors of practice are committed, their admission is particularly encouraged. By these means, an all pervading safety thinking is achieved, allowing an inherently questioning attitude, the prevention of complacency, a commitment to excellence, and the fostering of both personal accountability and corporate self-regulation in safety matters.⁵

Nuclear power plant operators have a professional responsibility to ensure that the facility is operated safely and within the requirements of the facility's license, including its technical specifications and the regulations and orders of the NRC Mechanical and electrical systems and components required for safety can and do fail. However, the automated safety features of the plant, together with the operator, can identify at an early stage degradation in plant systems that could affect reactor safety. The operator can take action to mitigate the situation. Therefore, nuclear power plant operators on each shift must have knowledge of those aspects of plant status relevant to their responsibilities, maintain their working environment free of distractions, and using all their senses, be alert to prevent or mitigate any operational problems. Each individual licensed by the NRC to operate the controls of a nuclear power reactor must be keenly aware that he or she holds the special trust and confidence of the American people, conferred through the NRC license, and that his or her first responsibility is to assure that the reactor is in a safe condition at all times.

The following criteria reflect the Commission's expectations concerning the conduct of operations in control rooms and licensed operators at nuclear reactors consistent with 10 CFR 50.54 and guidance provided in an NRC Circular and Information Notices:

—Conduct within the control room should always be professional and proper, reflecting a safety-minded approach to routine operations. The operator "at the controls" and the immediate supervisor must never relinquish their safety responsibilities unless properly relieved, including a thorough turnover briefing, by a qualified operator.

—Activities within the control room should be performed with formality. Operator actions must be in accordance with approved procedures. Verbal communications should be clear and concise. Appropriate consideration should be given to the need for acknowledgment and verification of instructions received.

—The control room of a nuclear power plant, and in particular the area

"at the controls", must be secure from intrusion. Access should be strictly controlled by a designated authority; only authorized personnel should be permitted to be present in the control room; and regulatory restrictions concerning manipulation of the controls must be meticulously observed.

—The operator at the controls, and the immediate supervisor, must be continuously alert to plant conditions and ongoing activities affecting plant operations, including conditions external to the plant such as grid stability, meteorological conditions, and change in support equipment status; operational occurrences should be anticipated; alarms and off-normal conditions should be promptly responded to; and problems affecting reactor operations should be corrected in a timely fashion.

—Activities within the control room should be limited to those necessary for the safe operation of the plant. Management should provide the direction, facilities, and resources needed to accommodate activities not directly related to plant operations.

—Activities outside the control room with the potential to affect plant operations, such as on-line maintenance and surveillance, should be fully coordinated with the control room. Effective methods for communication with or notification of the operator at the controls should be established and maintained throughout each evolution.

—Written records of plant operations must be carefully prepared and maintained in accordance with requirements for such records and in sufficient detail to provide a full understanding of operationally significant matters.

—The working environment in the control room should be maintained to minimize distractions to the operators. Management should act to remove distractions that would interfere with the operator's ability to monitor the plant either audibly or visually, including work activities that are not related to the operator's immediate responsibility for safe plant operation. Consideration should be given to reducing environmental distractions such as lighted alarms that are not operationally significant, or alarms that signify normal operating conditions.

—Foreign objects and materials not necessary for plant operations, ongoing maintenance, or surveillance testing should be restricted from the area "at the controls" to preclude inadvertent actuation of the controls or contamination of control devices.

Implementation of Policy

The Commission intends this Policy Statement to make clear the Commission's expectations and to

⁵ International Nuclear Safety Advisory Group (INSAG)-3. Basic Safety Principles for Nuclear Power Plants

provide guidance to licensees in improving and assessing the conduct of operations in the control rooms of nuclear power plants. The Commission believes that utility management should routinely monitor the conduct of operations at the plant, particularly in the control room, and review their procedures and policies on the conduct of operations, considering the guidance of this policy statement, to assure they support an environment for professional conduct.

Nothing in this policy statement limits the authority of the NRC to take appropriate enforcement action for violations of Commission requirements or on matters otherwise affecting the safe operation of the plant and thus the public health and safety.

Dated at Rockville, Maryland, this 17th day of January 1989.

**For the Nuclear Regulatory Commission.
Samuel J. Chilk,
Secretary of the Commission.**