U.S. NUCLEAR REGULATORY COMMISSION

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# REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

## REGULATORY GUIDE 1.114

## GUIDANCE ON BEING OPERATOR AT THE CONTROLS OF A NUCLEAR POWER PLANT

### A. INTRODUCTION

Paragraph (k) of §50.54, "Conditions of Licenses," of 10 CFR Part 50, "Licensing of Production and Utilization Facilities," requires that an operator or senior operator licensed pursuant to 10 CFR Part 55, "Operators' Licenses," be present at the controls at all times during the operation of a facility.[1] General Design Criterion 19, "Control Room," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 requires, in part, that a control room be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain the nuclear power plant in a safe condition under accident conditions. As defined in 10 CFR §50.2(t), the term "controls," when used with respect to nuclear reactors, means apparatus and mechanisms, the manipulation of which directly affects the reactivity or power level of the reactor. This guide describes a method acceptable to the NRC staff for complying with the Commission's regulations that require an operator to be present at the controls of a nuclear power plant. The Advisory Committee on Reactor Safeguards has been consulted concerning this guide and has concurred in the regulatory position.

### B. DISCUSSION

Operating experience has shown that there is a need for guidance with regard to acceptable methods of complying with the Commission's requirement for the presence of an operator at the controls of a facility. The operator at the controls of a nuclear power plant has many responsibilities, which include but are not limited to (1) adhering to the plant's technical specifications, plant operating procedures, and NRC regulations; (2) reviewing operating data, including data logging and review, in order to ensure safe operation of the plant; and (3) being able to manually initiate engineered safety features during various transient and accident conditions.

In order for the operator at the controls of a nuclear power plant to be able to carry out these and other responsibilities in a timely fashion, he must give his attention to the condition of the plant at all times. He must be alert in order to ensure that the plant is operating safely and must be capable of taking action to prevent any progress toward a condition that might be unsafe. This is facilitated by control room design and layout in which all controls, instrumentation displays, and alarms required for the safe operation, shutdown, and cooldown of the unit are readily available to the operator in the control room.

### C. REGULATORY POSITION

1. The operator at the controls of a nuclear power plant should have an unobstructed view of and access to the operational control panels,[2] including instrumentation displays and alarms, in order to be able to initiate prompt corrective action, when necessary, on receipt of any indication (instrument movement or alarm) of a changing condition.

2. The operator at the controls should not normally leave the area where continuous attention (including visual surveillance of safety-related annunciators and instrumentation) can be given to reactor operating conditions and where he has access to the reactor controls. For example, the operator should not routinely enter areas behind control panels where

* Line indicates substantive change from previous issue.

[1] Current Standard Technical Specifications require a licensed operator to be present in the control room at all times while fuel is in the reactor.

[2] Operational control panels are control panels that enable the operator at the controls to perform required manual safety functions and equipment surveillance and to monitor plant conditions under normal and accident conditions. Operational control panels include instrumentation for the reactor, reactor coolant system, containment, and safety-related process systems.

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Comments and suggestions for improvements in these guides are encouraged at all times, and guides will be revised, as appropriate, to accommodate comments and to reflect new information or experience. This guide was revised as a result of substantive comments received from the public and additional staff review.

Comments should be sent to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Section.

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plant performance cannot be monitored. The operator at the controls should not under any circumstances leave the surveillance area defined by regulatory position 3 for any nonemergency reason (e.g., to confer with others or for personal reasons) without obtaining a qualified relief operator at the controls. In the event of an emergency affecting the safety of operations, the operator at the controls may momentarily be absent from the defined surveillance area in order to verify the receipt of an annunciator alarm or initiate corrective action, provided he remains within the confines of the control room.

3. Administrative procedures should be established to define and outline (preferably with sketches) specific areas within the control room where the operator at the controls should remain. The procedures should define the surveillance area and the areas that may be entered, in the event of an emergency affecting the safety of operations, by the operator at the controls to verify receipt of an annunciator alarm or initiate corrective action.

4. Prior to assuming responsibility for being operator at the controls, the relief operator should be properly briefed on the plant status. In order to ensure that proper relief occurs, administrative procedures should be written to describe what is required. The administrative procedure should include, as a minimum, a definition of proper relief (e.g., what information is required to be passed on and acknowledged between the two operators).

5. A single operator should not assume the operator-at-the-controls responsibility for two or more nuclear power units at the same time.

## D. IMPLEMENTATION

The purpose of this section is to provide information to license applicants and licensees regarding the NRC staff's plans for using this regulatory guide.

This guide reflects current NRC staff practice. Therefore, except in those cases in which the applicant or licensee proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method described herein is being and will continue to be used in the evaluation of submittals for operating license or construction permit applications and the performance of licensees until this guide is revised as a result of suggestions from the public or additional staff review.

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