



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
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IE Circular No. 80-02

NUCLEAR POWER PLANT STAFF WORK HOURS

Description of Circumstances:

Studies indicate that with fatigue, especially because of loss of sleep, an individual's detection of visual signals deteriorates markedly, the time it takes for a person to make a decision increases and more errors are made, and reading rates decrease. Other studies show that fatigue results in personnel ignoring some signals because they develop their own subjective standards as to what is important, and as they become more fatigued they ignore more signals.

Inspections of personnel performance and training since the accident at Three Mile Island, have shown that in certain situations facility personnel are either required or allowed to remain on duty for extended periods of time. Also, complaints have been received from some licensed nuclear power plant operators concerning the number of continuous hours they have been on duty.

Licensee management is responsible for providing a sufficient number of trained personnel who are in the proper physical condition to operate and maintain the plant. Licensee management should review their administrative procedures covering the working hours of nuclear power plant staff. These procedures should establish a sound policy covering working hours for plant staff who perform safety related functions (e.g., senior reactor operators, reactor operators, health physicists, auxiliary operators, I&C technicians, key maintenance personnel, etc.)

Subcommittee ANS-3 is currently developing criteria to address the subject of operator work hours. These guidelines will become a part of ANSI N18.7. The NRC is also considering issuing requirements for administrative procedures that would control staff overtime. Until either the ANSI Standard is issued and endorsed by NRC (via a Regulatory Guide) or separate requirements are issued by NRC, it is recommended that the following guidance be used. The guidance should be applied to all personnel performing a safety related function:

1. Scheduled work should be limited to the following maximum work hours:
  - a. An individual should not be permitted to work more than 12 hours straight.

- b. There should be at least a 12-hour break between all work periods.
  - c. An individual should not work more than 72-hours in any 7-day period.
  - d. An individual should not work more than 14 consecutive days without having 2 consecutive days off.
2. In the event that special circumstances arise that require deviation from the above, such deviations should be authorized by the Station Manager with appropriate documentation of the cause. Plants should be staffed and schedules developed to operate such that exceptions are not required.
  3. If an operator is required to work in excess of 12 continuous hours, his duties should be carefully selected. It is preferable that he not be assigned any task that affects core reactivity or could possibly endanger the safe operation of the plant.

No written response to this Circular is required. If you desire additional information regarding this matter, contact the Director of the appropriate NRC Regional Office.

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79-25	Shock Arrestor Strut Assembly Interference	12/20/79	All licensees and holders of power reactor CPs
79-24	Proper Installation and Calibration of Core Spray Pipe Break Detection Equipment on BWRs.	11/26/79	All Holders of a Power Reactor OL or CP
79-23	Motor Starters and Contactors Failed to Operate	11/26/79	All Power Reactor Operating Facilities and Holders of Reactor CPs
79-22	Stroke Times for Power Operated Relief Valves	11/16/79	All Power Reactor Operating Facilities and all Utilities having a CP
79-21	Prevention of Unplanned Releases of Radioactivity	10/19/79	All holders of Power Reactor OLs and CPs
79-20	Failure of GTE Sylvania Relay, Type PM Bulletin 7305, Catalog 5U12-11-AC with a 12V AC Coil	9/24/79	All holders of Power Reactor OLs and CPs
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79-18	Proper Installation of Target Rock Safety-Relief	9/10/79	All Holders of Power Reactor OLs and CPs
79-17	Contact Problem in SB-12 Switches on General Electric Company Metalclad Circuit Breakers	8/14/79	All Power Reactor Licensees with a CP and/or OL