

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

October 12, 1993

NRC INFORMATION NOTICE 93-81: IMPLEMENTATION OF ENGINEERING EXPERTISE ON
SHIFT

Addressees

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to potential problems resulting from the ineffective implementation of the requirement for licensees to provide engineering expertise on shift. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

As a result of recommendations to the industry and the NRC regarding improvement of the ability of shift operating personnel to recognize, diagnose, and effectively deal with plant transients or other abnormal plant conditions following the accident at Three Mile Island in March 1979, each nuclear power plant is required to have a shift technical advisor (STA) on duty. The STA's function is to provide engineering and accident assessment expertise to the shift supervisor in the event of abnormal or accident conditions. The STA requirement was communicated to licensees in NUREG-0578 (July 1979) and NUREG-0737, Item I.A.1.1 (November 1980).

On September 25, 1985 the NRC approved the "Policy Statement on Engineering Expertise on Shift," published in the Federal Register (50 FR 43621) on October 28, 1985. This policy statement provides licensees two options for meeting the STA requirement. Option 1 permits licensees to combine one of the required on-shift senior reactor operator (SRO) positions with the STA position into a "dual role" position (SRO/STA). Option 2 permits licensees to place on each shift a dedicated STA who is qualified and participates in normal shift activities.

Recent NRC and industry surveys and studies, including the Office for Analysis and Evaluation of Operational Data (AEOD) study "Operating Experience Feedback Report - Human Performance in Operating Events," Volume 8 of NUREG-1275, December 1992, have noted some weaknesses and considerable diversity in licensee implementation of the STA requirement. "On-call" STAs are in use at

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14 of the 79 operating units that use dedicated STAs. Several of these licensees have STAs whose responsibilities do not include participation in such normal shift activities as shift turnover, plant log review, and shift training. In addition, the NRC continues to identify potential problems with some licensee's implementation of the "dual role" SRO/STA. Improper task allocation may lead to the overburdening of the SRO/STA during an event, particularly if that individual has been assigned additional duties. Improper task allocation also could result in the remaining control room personnel being overburdened when the "dual role" SRO/STA assumes the STA function. Furthermore, some licensees assign the STA to concurrent roles such as communicator or fire brigade member during an event. For example, according to the procedures at one facility, the STA would respond to a fire as the fire brigade leader rather than performing those functions identified for the STA in the Commission's policy statement.

Discussion

The following are excerpts from the Federal Register notice promulgating the Commission's "Policy Statement on Engineering Expertise on Shift:" "[The NRC] required that as of January 1, 1980, each nuclear power plant have on duty a Shift Technical Advisor (STA) whose function was to provide engineering and accident assessment advice to the Shift Supervisor in the event of abnormal or accident conditions....In this Policy Statement, 'accident assessment' means immediate actions needed to be taken while an event is in progress....The [dedicated] STA should assume an active role in shift activities. For example, the [dedicated] STA should review plant logs, participate in shift turnover activities, and maintain an awareness of plant configuration and status."

The above circumstances indicate the potential for distraction from or interference with STA duties when the STA serves in concurrent roles such as fire brigade leader or communicator. Timely response to the need for engineering expertise in the control room of an affected unit was one of the primary reasons for requiring an STA on shift.


The Commission's policy statement assumes that the STA will have an active role in shift activities. STA review of plant logs, participation in shift turnover activities, and maintenance of an awareness of plant configuration and status is clearly contemplated by the policy statement.

Proper implementation of the STA requirement can provide significant assurance that engineering expertise is available and accident assessment is carried out for the immediate actions needed to be taken while an event is in progress. This information notice, which affords licensees the opportunity to review their STA programs and assure that all appropriate areas are addressed, was provided in advance to the Commission as part of SECY-93-193. That SECY paper states that staff follow-up will be conducted through performance based evaluations of operational events.

Related Generic Communications

1. NRC Generic Letter 86-04, "Policy Statement on Engineering Expertise on Shift," dated February 13, 1986.
2. NRC Information Notice 91-77, "Shift Staffing at Nuclear Power Plants," dated November 26, 1991.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

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Attachment: List of Recently Issued NRC Information Notices

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NAME	JAArildsen*	WHSwenson*	RMGallo*	BABoger*
DATE	04/19/93	06/19/93	04/21/93	04/21/93

DOCUMENT NAME: 93-81.IN

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NAME	JAArildsen*	WHSwenson*	RMGallo*	BABoger*
DATE	04/19/93	06/19/93	04/21/93	04/21/93

DOCUMENT NAME: STA-IN.JLB

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LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
93-80	Implementation of the Revised 10 CFR Part 20	10/08/93	All byproduct, source, and special nuclear material licensees
93-79	Core Shroud Cracking at Beltline Region Welds in Boiling-Water Reactors	09/30/93	All holders of operating licenses or construction permits for boiling-water reactors (BWRs).
93-78	Inoperable Safety Systems At A Non-Power Reactor	10/04/93	All holders of OLs or CPs for test and research reactors.
93-77	Human Errors that Result in Inadvertent Transfers of Special Nuclear Material at Fuel Cycle Facilities	10/04/93	All nuclear fuel cycle licensees.
93-76	Inadequate Control of Paint and Cleaners for Safety-Related Equipment	09/21/93	All holders of OLs or CPs for nuclear power reactors.
93-75	Spurious Tripping of Low-Voltage Power Circuit Breakers with GE RMS-9 Digital Trip Units	09/17/93	All holders of OLs or CPs for nuclear power reactors.
93-74	High Temperatures Reduce Limitorque AC Motor Operator Torque	09/16/93	All holders of OLs or CPs for nuclear power reactors.
93-73	Criminal Prosecution of Nuclear Suppliers for Wrongdoing	09/15/93	All NRC licensees.
93-72	Observations from Recent Shutdown Risk and Outage Management Pilot Team Inspections	09/14/93	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
CP = Construction Permit

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