Shift Staffing and Augmentation

A. Definition of the Regulatory Problem.

Regulatory requirements and the supporting guidance, for emergency plan shift staffing are ambiguous, resulting in inconsistencies in shift emergency response organizations across plants of similar design. The lack of clarity in requirements and guidance could result in the implementation of shift staffing organizations that lack resources to functionally implement emergency plans to protect public health and safety. Further, the ambiguity detracts from efficiency in the development of emergency plan change requests and the review and approval of such requests by the staff when required by U.S. Nuclear Regulatory Commission (NRC) regulations.

B. Existing Regulatory Framework.

In 1980, the NRC required that licensees submit emergency plans for review and approval in order to continue operation. Emergency plans were submitted and the NRC reviewed and approved the plans individually. The requirements for staffing found in Title 10, Section 50.47(b)(2), of the *Code of Federal Regulations* (10 CFR 50.47(b)(2)) require that "adequate staffing to provide initial facility accident response in key functional areas is maintained at all times…." The guidance for defining "adequate staffing," contained in NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," issued November 1980, is considered to be a goal and therefore leaves some interpretation of adequate staffing to licensees. The emergency plan approval process was based on these requirements and goals, and created inconsistencies between emergency preparedness (EP) shift staffing at plants of similar design.

Several plants have submitted emergency plan changes that substituted additional shift staff for the initial 30 minute augmentation staff recommended by the guidance of NUREG-0654/FEMA-REP-1. Additionally, technological advances have been used as a basis for changes to shift staffing. The lack of clear regulation and guidance for shift staffing is confusing to licensees, has complicated the NRC review of plan changes submitted for approval, and has resulted in some unintended inconsistencies in approved plan revisions such as a lack of expertise on off-normal shifts. The current guidance directs that numbers of personnel in certain job categories be available and does not allow the use of cross-trained shift personnel who can reasonably perform across these categories. Additionally, as EP has matured, a deeper understanding has been gained of the tasks necessary for emergency plan implementation by shift staff. This experience allows the staff to identify functions that must be addressed rather than specify numbers of personnel in job categories.

C. Preliminary Options Considered to Resolve the Problem.

1. Take no action.

   This option would maintain the status quo, contrary to direction from the Commission in the staff requirements memorandum associated with SECY-06-0200, "Results of the Review of Emergency Preparedness Regulations and Guidance," dated January 8, 2007, and the staff's belief that the regulations need to be clarified.

2. Use voluntary programs.

The proposed regulatory change would provide a path that licensees may use for shift staffing changes. However an alternative would be to eliminate this rulemaking and allow industry to develop a standard for shift staffing. The staff believes that allowing industry to voluntarily develop a shift staffing standard is not appropriate. Licensees are required by 10 CFR 50.54(q) to maintain in effect emergency plans that meet the planning standards. The NRC has implemented this requirement by approving only those plans and plan changes that meet the guidance of NUREG-0654/FEMA-REP-1 or that provide an adequate alternative. Licensees are not permitted to change their staffing levels in a manner that deviates from the guidance unless the NRC staff specifically approves. In the past, the NRC found many licensee submissions for shift staffing changes to be unacceptable because necessary response functions were not addressed. There may be significant resource pressure on licensees to reduce staffing in general and shift staffing in particular. The staff believes that an industry-developed staffing standard would reflect those pressures in a manner that would not provide adequate resources.

3. Implement proposed regulation.

The staff proposes to revise regulations for shift staffing and promulgate supporting guidance identifying the actual functions necessary for initial emergency response. This proposed regulatory change would provide a method that licensees may use to revise the staffing commitments in emergency plans. These actions would clarify the NRC's expectations regarding shift staffing, provide for shift coverage of critical EP functions, and allow licensees increased flexibility in shift staffing options.

The staff believes that implementation of such a proposed regulation would best resolve the issue. The regulation proposed would not be complicated and would rely on guidance for the determination of adequacy. Alternative staffing schemes as well as site-specific solutions would be allowed by the functional-oriented guidance and would be based on a staff analysis of initial emergency response requirements. The regulation would provide licensees with clear but flexible requirements for the submission of emergency plan organizational changes while ensuring the adequacy of response resources.

4. Implement some other regulatory scheme.

It is possible that some other regulatory scheme would be more effective and efficient than the one proposed. The staff examined several alternate schemes in the development of the proposed scheme. For example, there was a concern that the regulations would not be specific enough and more details should be put in the regulation. This scheme was rejected because there would be too many details regarding collateral, parallel and serial duties. Alternately, it was suggested that the regulations are adequate as they stand and only the guidance needs to be changed. However, guidance would not ensure the adequacy of shift emergency response organizations because it is not enforceable and can not be verified through inspection.

In 2005, the NRC held public meetings with key stakeholders, including the industry. The stakeholders did not identify other regulatory schemes. Furthermore, the staff is not currently aware of other regulatory schemes that would clarify the requirements. However, the NRC rulemaking process offers the opportunity for public comment on proposed regulations. If another viable scheme is proposed during that process, the staff will review it and, if it adequately protects public health and safety, propose its implementation to the Commission for consideration.

D. Technical References and Supporting Documents.

- 10 CFR 50.47(b)(2).
- 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," Section IV.A.
- NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Section II.B, November 1980.
- NUREG-0696, "Functional Criteria for Emergency Response Facilities," March 2002.
- NUREG-1791, "Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)—Final Report," July 2005.
- NUREG-0933, "A Prioritization of Generic Safety Issues," footnote 1655, October 2006.
- Supplement 1 to NUREG-0737, "Clarification of TMI Action Plan Requirements," January 1983.
- IN 91-77, "Shift Staffing at Nuclear Power Plants, November 26, 1991.
- IN 93-44, "Operational Challenges during a Dual-Unit Transient," June 15, 1993.
- IN 93-81, "Implementation of Engineering Expertise on Shift," October 12, 1993.
- IN 95-23, "Control Room Staffing Below Minimum Regulatory Requirements," April 24, 1995.
- IN 95-48, "Results of Shift Staffing Study," October 10, 1995.
- SECY-93-184, "Shift Staffing at Nuclear Power Plants," June 29, 1993.

Additionally, guidance would be developed and promulgated either in a supplement to NUREG-0654/FEMA-REP-1 or through Regulatory Guide 1.101, "Emergency Planning

and Preparedness for Nuclear Power Reactors," issued October 1981, that would provide a description of the EP and safety functions that a nuclear power plant shift staffing organization must accomplish. The staff will develop this guidance and seek stakeholder input.

E. Potential Response from Stakeholders.

Licensees are likely to be supportive of the proposed enhancements to the EP regulations as alternate guidance for shift staffing because it will provide flexibility and certainty in approval (if the guidance is followed). Offsite response organizations and advocacy groups have in general been supportive of enhancements to the EP programs, but any appearance of "loosening" requirements will likely draw criticism from advocacy groups. The response of the Federal Emergency Management Agency is not certain, but because this is largely an on-site issue, agency staff is not likely to have a strong opinion.