Task HF1: Staffing and Qualifications (Rev. 2)

This task was developed to assure that the number and capabilities of the staff at nuclear power plants are adequate to provide safe operation. To meet this goal, consideration will be given to: (1) the numbers and functions of the staff needed to safely perform all required plant operations, maintenance, and technical support for each operational mode; (2) the minimum qualifications of plant personnel in terms of education, skill, knowledge, training experience, and fitness for duty; and (3) appropriate limits and conditions for shift work including overtime, shift duration, and shift rotation.

ITEM HF1.1: SHIFT STAFFING DESCRIPTION

This issue called for a determination of the minimum appropriate shift crew staffing composition. This determination was to be made from developed personnel projection and allocation models and from evaluations of job and task analyses and PRA data. Staffing practices of foreign and domestic utilities were surveyed to evaluate current practices, regulations, and staffing levels considering such variables as plant size, control room arrangement and configuration, and plant layout. The issue consists of two parts: (1) the Staffing Rule; and (2)

conforming amendments to Regulatory Guide 1.114[1] and SRP[2] Section 13.1.2.

The Staffing Rule which is officially known as "Licensed Operator Staffing at Nuclear Power Units" was published in the Federal Register on July 11, 1983 (48 FR 31611)[3] with an effective date of January 1, 1984; this rule is

now included in 10 CFR 50.54. The proposed conforming requirements to Regulatory Guide 1.114[4] and SRP[5] Section 13.1.2 contain no requirements beyond those included in the Staffing Rule. Implementation of these requirements will be verified by resident inspectors. No further verification will be necessary upon issuance of the

Regulatory Guide[6] and SRP[7] changes.

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[1] Regulatory Guide 1.114, "Guidance on Being Operator at the Controls of a Nuclear Power Plant," U.S. Nuclear Regulatory Commission, February 1976 [8012110846], (Rev. 1) November 1976 [8307070393], (Rev. 2) May 1989 [8906200342].

[2] NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, (1st Ed.) November 1975, (2nd Ed.) March 1980, (3rd Ed.) July 1981.

[3] Federal Register Notice 48 FR 31611, "10 CFR Part 50, Licensed Operator Staffing at Nuclear Power Plants," July 11, 1983.

[4] Regulatory Guide 1.114, "Guidance on Being Operator at the Controls of a Nuclear Power Plant," U.S. Nuclear Regulatory Commission, February 1976 [8012110846], (Rev. 1) November 1976 [8307070393], (Rev. 2) May 1989 [8906200342].

[5] NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, (1st Ed.) November 1975, (2nd Ed.) March 1980, (3rd Ed.) July 1981.

[6] Regulatory Guide 1.114, "Guidance on Being Operator at the Controls of a Nuclear Power Plant," U.S. Nuclear Regulatory Commission, February 1976 [8012110846], (Rev. 1) November 1976 [8307070393], (Rev. 2) May 1989 [8906200342].

[7] NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, (1st Ed.) November 1975, (2nd Ed.) March 1980, (3rd Ed.) July 1981.

CONCLUSION

In pursuing the resolution of this high priority issue, the staff issued Revision 2 to Regulatory Guide 1.114[8] in May 1989. A draft revision to SRP[9] Section 13.1.2 was prepared by RES and forwarded to NRR for publication.[10] Thus, this issue was RESOLVED and new requirements were established.

ITEM HF1.2: ENGINEERING EXPERTISE ON SHIFT DESCRIPTION

This issue called for a decision on the need for engineering expertise on shift. This decision was to be based in part on the functions and duties required by using the results of the job/task analysis and evaluating the STA experience. A policy statement on engineering expertise on shift was to be issued and its effectiveness

evaluated. This issue was identified in Table 7 of the NRC 1985 Annual Report as Item 1.1 of the HFPP but was made Item HF1.2 in June 1986.[11] The final policy statement was approved by the Commission on September 12, 1985 and was published in the Federal Register on October 28, 1985 (50 FR 43621).[12]

CONCLUSION

This issue has been RESOLVED and no new requirements were established. **ITEM HF1.3: GUIDANCE ON LIMITS AND CONDITIONS OF SHIFT WORK DESCRIPTION**

Experience and research data indicate that shift work and the use of overtime can have an adverse effect upon operator performance. To determine the appropriate limits and conditions for shift work, activities are planned to: (1) determine the effects of varying shift duration using nuclear power plant simulators, and (2) survey and

assess the experience of other industries with job requirements similar to the nuclear industry with regard to shift arrangements and rotation. This effort will allow the NRC to establish trade-offs among factors affecting shift work and overall safe performance requirements. The results were to be reported as a NUREG document and a specific research effort was to be undertaken if shift rotation and conditions of overtime were found to be serious human factors problems.

CONCLUSION

This issue was resolved with the issuance of Generic Letters 82-12[13] and 82-16[14] and no new

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[8] Regulatory Guide 1.114, "Guidance on Being Operator at the Controls of a Nuclear Power Plant," U.S. Nuclear Regulatory Commission, February 1976 [8012110846], (Rev. 1) November 1976 [8307070393], (Rev. 2) May 1989 [8906200342].

[9] NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, (1st Ed.) November 1975, (2nd Ed.) March 1980, (3rd Ed.) July 1981.

[10] NUREG-1174, "Evaluation of Systems Interactions in Nuclear Power Plants," U.S. Nuclear Regulatory Commission, May 1989.

[11] Memorandum for J. Funches from F. Rowsome, "Handling of DHFT Issues in GIMCS," June 6, 1986. [8606120789]

[12] Federal Register Notice 50 FR 43621, "Commission Policy Statement on Engineering Expertise on Shift," October 28, 1985.

[13] Letter to All Licensees of Operating Plants, Applicants for an Operating License, and Holders of Construction Permits from U.S. Nuclear Regulatory Commission, "Nuclear Power Plant Staff Working Hours (Generic Letter No. 82-12)," June 15, 1982. [ML082840762]

[14] Letter to All Pressurized Power Reactor Licensees from U.S. Nuclear Regulatory Commission,

requirements were established.

"NUREG-0737 Technical Specifications (Generic Letter No. 82-16)," September 20, 1982. [ML031080304]