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February 14, 2000

DOCKET NUMBER

PETITION RULE PRM 26-2

(64FR67202)

Ms. Annette L. Vietti-Cook
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001.

Attention: Rulemakings and Adjudications Staff

Re: Comments on Petition for Rulemaking dated September 28, 1999
filed by Mr. Barry Quigley, 64 Fed. Reg. 67202 (December 1, 1999),
PRM-26-2

Dear Ms. Vietti-Cook:

The following comments on the petition for rulemaking filed by Mr. Barry Quigley related to overtime are submitted by Winston & Strawn for itself, on behalf of Commonwealth Edison, Energy Northwest, Niagara Mohawk Power Corporation, a number of other utilities and as counsel for NUBARG.¹ Winston & Strawn is a law firm which represents utilities, which are the owners and operators of commercial nuclear power plants and which would be most directly affected by the petition for rulemaking. For the following reasons, we respectfully request that the Nuclear Regulatory Commission deny the request for proposed rulemaking as unnecessary for the safe operation of these nuclear plants.

The nuclear industry enjoys the reputation of being one of the safest industries in which to work. This reputation is due, in no small measure, to the continuing ability of nuclear

¹ NUBARG is a consortium of a dozen utilities (representing 40 power reactors) which was formed in the early 1980s and actively participated in the development of the NRC's backfitting rule (10 C.F.R. § 50.109) in 1985. NUBARG has subsequently monitored the NRC's implementation of the backfitting rule.

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power plant employees, and, in particular, licensed operators, to support the operation of their units. Recognizing that operator effectiveness is of paramount importance and an essential element of the defense in depth of the public health and safety, the nuclear power industry has taken appropriate measures to ensure the high performance and alertness of operators. The nuclear industry has devoted significant resources to the identification, monitoring, and improvement of human performance issues. Moreover, the NRC has required licensees to adopt fitness-for-duty and behavioral observation programs and administrative requirements applicable to a range of employees, including all those having unescorted access to the facility. These efforts have been successful in accomplishing their goals and the petitioner has not demonstrated a need for any additional actions at this time, particularly the prescriptive, complex, and difficult to implement provisions which are advocated in his rulemaking petition.

Background

On December 1, 1999, the Nuclear Regulatory Commission ("NRC" or "Commission") published for public comment a notice of receipt of a petition for rulemaking dated September 28, 1999 that was filed with the Commission by Mr. Barry Quigley (64 Fed. Reg. 67202) ("Notice of Receipt"). Petitioner states that his action is based upon the transition of the electric power industry, including the nuclear power segment of that industry, into the "increasingly competitive electricity market."² The petitioner argues that this transition translates into fewer people who are working more and sometimes many more hours at nuclear power plants.³ The NRC states that the petitioner believes that clear and enforceable working hour limits are required to ensure that the impact of personnel fatigue is minimized.⁴ In particular, the petitioner requested that the NRC (1) add enforceable working hour limits to 10 C.F.R. Part 26, (2) add a criterion to 10 C.F.R. § 55.33(a)(1) to require evaluation of known sleeping disorders, (3) revise the Enforcement Policy to include examples of working hour violations warranting various NRC sanctions; and (4) revise NRC Form-396 to include self-disclosure of sleeping disorders by licensed operators.⁵ The petitioner also requested changes to NRC Inspection

² Petition of Barry Quigley dated September 28, 1999 (hereinafter "Petition") at 1.

³ Id.

⁴ 64 Fed. Reg. 67202.

⁵ Id. at 67203-04.

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Procedure 81502, "Fitness for Duty Program."⁶

Petitioner fails to support his basic premise by any compelling argument or study. He presents only the briefest anecdotal data. By contrast, the NRC's own review and analysis of the issue of operator staffing does not support the proposition advanced by Mr. Quigley. In a letter dated May 18, 1999 by then Chairman Shirley Ann Jackson to the Hon. Edward J. Markey, the NRC stated the following with regard to operator staffing:

The NRC does not keep records of staffing levels for all categories of personnel performing safety-related functions at nuclear power plants. However, the NRC maintains records on the number of individuals holding NRC-granted operator licenses. In 1995, there were approximately 4,700 licensed operators working at U.S. commercial nuclear power plants. As of March 1, 1999, there were 4,546 licensed operators. Although the total number of licensed operators has declined, there are currently 5 fewer operating nuclear reactor facilities than there were in 1995. As a result, the average number of licensed operators per operating unit has remained at about 42 during this time period. Dual-unit sites, such as the Byron nuclear plant, generally maintain 70 to 90 licensed operators. As of March 1, 1999, Byron Station had 93 licensed operators.⁷

The petition fails to recognize the simple fact that there exist clear incentives for licensees of nuclear power plants to provide adequate levels of employees necessary to successfully operate their nuclear power plants. In a competitive environment, revenues are generated from a plant only when it is operating, thereby creating incentives to have an adequate number of employees to respond to contingencies as well as to perform routine operating, maintenance and support functions that keep a plant operating well. Avoidance of fatigue and mistakes (which could hinder operation or cause a shutdown) are clearly among the paramount interests of a plant operator. To the extent that staffing levels of nuclear power plants have been

⁶ Id. at 67202.

⁷ Questions and Answers Attachment, p. 6. Similar letters were sent to Reps. John D. Dingell and Ron Klink on the same date. Mr. Quigley is an operator at the Byron Station, which maintains its number of licensed operators above the norm.

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reduced over time, licensees have taken measures to assure that capable employees are retained and have taken measures to increase the efficiency and productivity of those supporting operation of the plants.

The NRC has examined the effect of competition in the electric industry on the safety of nuclear power plants and has taken a number of measures to assure that its regulatory authority and programs are sufficient to protect public health and safety. (See Final Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry, 62 Fed. Reg. 44071, (August 19, 1997).) With respect to safety implications, that Policy Statement reaffirmed that the NRC's primary tool for evaluating and ensuring safe operations at its licensed facilities is through its inspection and enforcement programs. In her May 18, 1999 letter, Chairman Jackson indicated that NRC inspectors have periodically evaluated the use of overtime relative to a plant's technical specifications and the NRC's Policy on Factors Causing Fatigue of Operating Personnel at Nuclear Reactors.⁸ The Chairman stated that in the future the Commission would reassess its Policy on Factors Causing Fatigue of Operating Personnel at Nuclear Reactors and continue to follow up on safety significant occurrences to determine root causes, including the potential contribution of personnel fatigue and make any needed adjustments in its regulatory program.⁹

The NRC's present guidance is sufficient to assure that overtime is not abused. Generic Letter 82-12, "Nuclear Power Plant Staff Working Hours," required that licensees develop administrative procedures governing required shift staffing. These administrative procedures were set forth in a policy "the objective of which is to prevent situations where fatigue could reduce the ability of operating personnel to keep the reactor in a safe condition." Overtime control procedures adopted by licensees generally require supervisors to assess and attest to an employee's physical and mental alertness, ability to maintain concentration, and ability to safely complete a task prior to allowing that person to exceed work hour requirements. Such procedures typically require that the fitness-for-duty of the individual be periodically reassessed in order to determine his or her ability to continue the assigned task.

Petitioner's attempt to reinterpret data already collected by the NRC and its licensees to provide further basis for his petition is not rigorous and fails to support his premise. Petitioner argues that NRC inspection reports listed 87 occurrences of staffing as less than

⁸ Questions and Answers Attachment, p. 4.

⁹ S. Jackson letter at 2.

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adequate while the industry using data from licensee event reports("LERs") only listed 11 for a particular period.¹⁰ First, to draw a correlation between "staffing being less than adequate" and fatigue is not supported and is unwarranted. For example, there may have been instances where a particular job may have been determined to have been inadequately staffed in terms of number of individuals or required knowledge or skills. However, at the time the resources may have been available at the facility, but not properly allocated. Second, the disparity in numbers between NRC inspection reports and industry LERs may be explained in a number of ways, most of which are clearly unrelated to fatigue issues as suggested by petitioner.

The petition attempts to equate certain categories in the Human Factors Information System ("HFIS") database (e.g., work practices or skill of the craft less than adequate, non-conservative decisionmaking or questioning attitude less than adequate, self-checking less than adequate, and awareness or attention less than adequate) to fatigue related issues.¹¹ While undoubtedly fatigue cannot be ruled out as a contributor to the occurrence of any such personnel deficiencies, petitioner has failed to demonstrate that they played "a role in a respectable percentage"¹² or a significant role in any major event. Petitioner attempts to compare these statistics to a National Transportation Safety Board ("NTSB") report related to "consequential events,"¹³ and a finding that 21 to 33% were fatigue related. There is no demonstration that the NRC database included only consequential events and therefore a comparison of the percentages is without foundation.

Petitioner's citation of an NTSB report and the comparison of funds allocated for fatigue research by the Department of Transportation versus that of the NRC, do not appear to be relevant to the nuclear industry. Unlike the transportation industry, individuals performing nuclear safety-related activities are rarely alone during the conduct of those activities, and would typically not be subject to the degree of monotony suffered by long distance drivers. In most cases, any inappropriate actions taken by individuals working alone would become readily

¹⁰ Petition at 1.

¹¹ Petition at 2.

¹² Id.

¹³ Id.

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apparent to other personnel in the plant and timely corrective action taken to mitigate the consequences of those actions. Additionally, the quality assurance program mandated by 10 CFR 50, Appendix B, adherence to those regulatory positions addressed by the Regulatory Guides listed in Section 17.3 of the Standard Review Plan (NUREG-0800), as well as nuclear industry standards, require the independent verification of critical tasks, such as those involving certain design, operating, and maintenance activities (e.g., design verification, quality control inspection activities, post-maintenance testing, and the independent verification of valve positioning), so as to assure the satisfactory completion of those tasks.

Petitioner refers to the incident at Peach Bottom in 1987 as fatigue related.¹⁴ As acknowledged by the NRC and licensee in that case, clearly that incident is not related primarily to fatigue but to significant management deficiencies which tolerated unacceptable conduct.¹⁵ The petitioner specifies three other factors that he states would reduce faith in NRC and industry reporting on fatigue.¹⁶ He advances the theory that some fatigue errors are latent and may not be discovered for quite some time.¹⁷ However, if the effect of fatigue were substantial or had fatigue errors contributed to a substantial number of errors, the traceability to fatigue would be obvious or, at least, more direct and subject to confirmation. Second, petitioner states that the HFIS database shows 392 occurrences for which a root cause analysis was determined to be less than adequate, apparently reasoning that a root cause related to fatigue may have been missed.¹⁸ He does not state why such a "fatigue" root cause is more likely to have been missed than any of

¹⁴ Petition at 3.

¹⁵ In the August 10, 1988 letter transmitting the Order and Notice of Violation and Proposed Imposition of Civil Penalty, the NRC found that the failure by site and corporate management to identify, investigate and correct the inattentiveness and willful violation of control room staffing requirements demonstrated a significant lack of management attention to, and control of, operations at Peach Bottom.

¹⁶ Petition at 2-3.

¹⁷ Id. at 2.

¹⁸ Id.

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the myriad of other causes. Third, he argues that LERs substantially understate fatigue as the cause of reportable events. As part of routine inspection activities, the NRC Resident Inspectors of the plant in question examine the quality of LERs and other root cause evaluations. Thus, a significant underreporting of fatigue as a cause of reported events is unlikely. Fourth, petitioner states that the NRC is not aggressive in looking for fatigue issues.¹⁹ Certainly, if fatigue issues played a large role in significant events, they would have been evident and self identifying, and, as a result, thoroughly investigated. In any event, we think the petitioner's conclusions drawn from the guidance given to NRC inspectors regarding labor strikes relied upon by petitioner to support this proposition is inappropriate.²⁰ The NRC's Inspection Manual states that "recognizing that the area of fatigue is very subjective, the inspectors should find clear evidence of an effect on safety before raising this issue with plant management."²¹ This appears to be an appropriate caution. However, it should be noted that the quoted section requires the inspector to look for fatigue from long hours at work which might affect the continued safe operation of the plant.

The Petitioner's Proposed Amendments

Petitioner recommends that there be specific limits on personnel performing safety-related work at a facility.²² Initially, it is difficult if not impossible to identify and keep separate records for people who may be doing at least some "safety related work" during the course of a work week. The case of an individual who may have incidental safety-related tasks as part of his work day is not addressed by petitioner.

The petitioner would add a new definition to 10 C.F.R. Part 26 which would require that it apply to all safety related services "while on property owned or controlled by the licensee."²³ This would be applicable to individuals who may not have unescorted access and

¹⁹ Id. at 3.

²⁰ Id.

²¹ NRC Inspection Manual, Inspection Procedure 92711, Section 3.03.

²² Id. at 4.

²³ Id. at 6.

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thus may not be within the present purview of 10 C.F.R. Part 26. Its scope is arbitrary in that an engineer working at the site would be covered while the same engineer working for a contractor offsite would not. Petitioner has made no showing that any increase in the scope of workers covered by 10 C.F.R. Part 26 is needed. Most importantly, with regard to the impact of the limits on safe operation the petitioner recognizes that "fatigue is related to several factors including time since awakening."²⁴ While petitioner would put stringent and defined limits on work hours, the rationale for their adoption breaks down inasmuch as the variability among individuals' sleeping habits and daily lifestyle choices may have a more significant impact on fatigue than any uniform limitation on working hours. Thus, the petitioner has not demonstrated that his proposed detailed structure of hour limits is warranted.

Petitioner then describes his suggested prescriptive set of limits on working hours. While mathematically exact, there is no demonstration of the need for either the individual or the collective requirements advanced by petitioner, given the lack of any demonstrated effect of fatigue on significant events or the failure of the presently imposed administrative limit system on overtime and the ability of the present fitness for duty and behavioral observation programs to assure safe operation of the facilities. For example, petitioner proposed imposing on shift workers annual limits which are less than those for non-shift workers based upon general considerations of circadian rhythms and "working through the pre-dawn trough in performance,"²⁵ but provides no specific basis for the difference in the maximum annual limit.

Petitioner requests that NRC Form-396 and 10 C.F.R. Part 55 be revised to require self-disclosure and evaluation of known sleep disorders.²⁶ However, such revision does not appear to be necessary. NRC Form-396 (1-2000) relating to "Certification of Medical Examination by Facility Licensee" requires that as a result of a medical exam, the physician certify that the applicant has been found to meet the "fitness for duty requirements for licensed operators" at the facility. Reference to 10 C.F.R. Part 26 indicates that fatigue is one of the fitness for duty issues required to be addressed therein. Furthermore, the form requires that, based upon the physical examination, "including information furnished by the applicant," the physician determine that the applicant's physical condition and general health are such that the

²⁴ Id.

²⁵ Id.

²⁶ Id. at 7.

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applicant "would not be expected to cause operational errors endangering public health and safety." If necessary, the physician may recommend that an applicant's operator license be conditioned. Clearly, the existing process already allows factors of fatigue and sleep disorder issues to be raised and considered in the medical evaluation of an individual. Further rulemaking is not required.

Section 26.22 currently requires that managers and supervisors receive training to ensure they understand behavior observation techniques for detecting degradation in performance, impairment, or changes in employee behavior, regardless of the cause. Therefore, the proposed revision to 10 C.F.R. Part 26 which would mandate that employees be specifically monitored for signs of fatigue would provide no added value. For the same reason, petitioner's request to modify 10 C.F.R. Part 26 to eliminate the general reference to the issue of fatigue as found in Section 26.20²⁷ is unsupported and not warranted.

New Overtime Requirements Cannot Satisfy the NRC's Backfit Rule

Any new requirements on limitations on overtime at nuclear power plants would affect Part 50 licensees and, thus, be subject to the NRC's backfit rule. 10 C.F.R. § 50.109(a)(1). Section 50.109(a)(3) of the rule establishes two fundamental criteria that must be met by a new regulation that does not qualify for any of the backfit exceptions in 10 C.F.R. § 109(a)(4). Backfitting is permissible only if the new requirement results in a substantial increase in the overall protection of the public health and safety or common defense and security and the increased protection justifies the direct and indirect costs of implementing the new requirements. 10 C.F.R. § 50.109(a)(3). Neither of these conditions can be met by any requirements or limitations on overtime at nuclear power plants. Moreover, none of the exceptions in the backfit rule would apply to such requirements or limitations. Accordingly, the proposed requirements and limitations on overtime at nuclear power plants do not satisfy the backfit rule.

First, additional requirements or limitations on overtime would not result in a substantial increase in safety. As has already been discussed, current overtime practices and procedures have been designed to ensure that all plant personnel are adequately rested and alert while performing their duties. Further reductions in work hours, therefore, would not materially improve the ability of plant personnel to competently perform their assigned duties. Because further reductions in work hours would have no material impacts on safety, such reductions (a fortiori) cannot substantially increase public health and safety.²⁸

²⁷ Id. at 5.

²⁸ Common defense and security are not affected by this request so need not be considered.

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Second, the direct and indirect costs of any additional overtime requirements or limitations are not justified by increased protection. Because no increased protection would result from such additional overtime requirements or limitations, as discussed above, no costs for such overtime requirements or limitations can be justified. Thus, neither of the NRC's backfit criteria could be satisfied by any additional overtime requirements or limitations.

Finally, none of the exceptions in the backfit rule would apply. All facilities currently are in compliance with overtime limitations. 10 C.F.R. § 50.109(a)(4)(i). Additional overtime requirements and limitations are not required to provide adequate protection of the public health and safety because current practices and procedures have been demonstrated, contrary to the assertions by the petitioner, to provide such adequate protection. 10 C.F.R. § 50.109(a)(4)(ii). A redefinition of adequate protection as it may apply to overtime is not justified for the reasons discussed above. 10 C.F.R. § 50.109(a)(4)(ii). Because none of the backfit exceptions apply and because neither of the backfit criteria can be met, new overtime requirements or limitations cannot satisfy the backfit rule.

Conclusion

For the foregoing reasons, the subject petition for rulemaking does not provide a sufficient basis for the relief requested. The NRC clearly has recognized that the issue of employee overtime is a significant one that deserves attention and continuing evaluation. These factors are already taken into account in fitness for duty, training and behavioral observation programs which are required by the Commission's regulations, and licensees are sensitive to the fatigue and overtime issues. Moreover, the specific provisions proposed by petitioner were not justified on the basis of reference to studies or experience nor do they take into account individual personal and lifestyle differences among licensee personnel. At the most, the Commission should consider reinforcing existing programs and standards for behavioral observation rather than granting the petition. For these reasons, the petitioner's request to institute a proceeding should be denied.

Sincerely,

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