



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20585

001

March 10, 1994

MEMORANDUM FOR: Nuclear Document System [NUDOCS]
Office of Administration

FROM: Loren L. Bush, Jr., Chief
Program Development and Review Section

Safeguards Branch
Division of Radiation Safety and Safeguards
Office of Nuclear Reactor Regulation

SUBJECT: REGULATORY HISTORY PROCEDURES MODIFICATIONS
TO THE FITNESS-FOR-DUTY [FFD] PROGRAM
REQUIREMENTS [10 CFR PART 26]

Enclosed are the documents associated with the NRC modifications of the Fitness for Duty Program requirements [10 CFR Part 26].

If you need further clarification, I can be reached on 504-2944 or Elaine Koup on 504-2932.

Enclosure M-6 for Loren Bush
Loren L. Bush, Jr., Chief
Program Development and Review Section
Safeguards Branch
Division of Radiation Safety and
Safeguards
Office of Nuclear Reactor Regulation

Enclosure: As stated

CC: Michael T. Lesar

9403140061 940310
PDR PR
26 58FR15810 PDR

REGULATORY HISTORY PROCEDURES
MODIFICATIONS TO FITNESS FOR DUTY [FFD]
PROGRAM REQUIREMENTS
10 CFR PART 26

Date	Document Title
01/05/94	Federal Register Notice [59 FR 502]
03/24/93	Federal Register Notice [58 FR 15810]
03/24/93	Federal Register Notice [58 FR 15884]
12/21/93	STAFF MEMORANDUM [Taylor]
02/18/93	STAFF MEMORANDUM [Taylor]
10/20/92	STAFF MEMORANDUM [Taylor]
11/04/93	AFFIRMATION MODIFICATIONS OF FITNESS FOR DUTY PROGRAM REQUIREMENTS CONCERNING RANDOM DRUG TESTING RATE SECY-93-302
01/26/93	NOTATION VOTE MODIFICATION TO THE RANDOM DRUG TESTING RATE SECY-93-014
08/04/92	NOTATION VOTE APPROPRIATE RANDOM DRUG TESTING RATE FOR THE NUCLEAR POWER INDUSTRY SECY-92-271

not significant within the meaning of section 3(f) of E.O. 12866, nor does this rule have Federalism implications warranting the preparation of a Federalism Assessment in accordance with E.O. 12612.

List of Subjects in 8 CFR Part 204

Administrative practice and procedure, Aliens, Employment, Immigration, Petitions.

Accordingly, part 204 of chapter I of title 8 of the Code of Federal Regulations is amended as follows:

PART 204—IMMIGRANT PETITIONS

1. The authority citation for part 204 continues to read as follows:

Authority: 8 U.S.C. 1101, 1103, 1151, 1153, 1154, 1182, 1186a; 1255; 8 CFR part 2.

2. In § 204.5, paragraph (d) is amended by adding a new sentence immediately following the first sentence of the paragraph to read as follows:

§ 204.5 Petitions for employment-based immigrants.

(d) **Priority date.** * * * In the case of labor certifications accepted for processing by any office within the employment service system of the Department of Labor before October 1, 1991, if a petition filed under section 203(b) of the Act is not filed before October 1, 1993, or within 60 days after the date of certification by the Department of Labor, whichever is later, the priority date shall be the date the petition is properly filed with the Service. * * *

Dated: December 30, 1993.

David Meissner,

Commissioner, Immigration and Naturalization Service

(FR Doc. 94-175 Filed 1-4-94 8:45 am)

BILLING CODE 4410-10-44

NUCLEAR REGULATORY COMMISSION

10 CFR Part 26

RIN 3150-AE38

Modifications to Fitness-For-Duty Program Requirements

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is amending its regulations governing fitness-for-duty (FFD) programs that are applicable to licensees who are authorized to

construct or operate nuclear power reactors and to licensees authorized to possess, use, or transport formula quantities of strategic special nuclear material (SSNM). The amendment permits licensees to reduce the random testing rate for all persons covered by the fitness-for-duty regulations to an annual rate equal to 50 percent.

EFFECTIVE DATE: January 1, 1994.

ADDRESSES: Copies of the regulatory analysis, the comments received, and the Government Accounting Office (GAO) report (GAO/GGD-93-13) of November 1992 may be examined at the NRC Public Document Room, 2120 L Street NW, (Lower Level), Washington, DC.

Copies of NUREG-1354, NUREG/CR-5758 (Volumes 1, 2, and 3), and NUREG/CR-5784 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5282 Port Royal Road, Springfield, VA 22161. A copy is available for inspection and/or copying for a fee in the NRC Public Document Room, 2120 L Street NW, (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT: Loren L. Bush, Jr., Safeguards Branch, Division of Radiation Safety and Safeguards, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone, (301) 504-2944.

SUPPLEMENTARY INFORMATION:

Background

The NRC has reviewed experiences gained since publication of the current FFD rule on June 7, 1989 (54 FR 24468), and implementation by power reactor licensees on January 3, 1990, and determined that it may be appropriate to modify the random testing rate. Accordingly, on March 24, 1993 (58 FR 15810), the Commission published a proposed modification to the FFD rule that would permit a reduction in the random testing rate for licensee employees, but maintain the 100-percent random testing rate for contractors and vendors.

Summary of Public Comments

The comment period expired on June 22, 1993. Forty comment letters were received. Twenty-eight were from power reactor licensees, six from unions, one from an industry association, one from a vendor, three from licensed reactor operators, and one from a private citizen. There was overwhelming support for the proposed reduction in

the annual rate of random testing for licensee employees. Most of the commenters believed that the reduced rate also should apply to contractors and vendors, and several commenters proposed a flexible, performance-based rate. There was no support for excluding from any reduction in the random testing rate certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators. A summary of the comments received and the NRC's responses are presented below.

1. Comment: The random testing rate for licensee employees should be reduced to 50 percent.

All of the 23 commenters submitting comments on the Commission's proposed reduction of the random testing rate to 50 percent for licensee employees supported the proposal. The reason most often expressed was the low rate of positive random test results experienced by licensee employees, particularly in comparison with other industries having significant safety concerns. These commenters believe that this low industry-wide positive rate justifies the lowering of the random testing rate to 50 percent. Some commenters stated that a 50 percent rate for licensee employees would make that rate consistent with the random testing rate currently required in the substance abuse programs mandated for entities regulated by the agencies within the Department of Transportation (DOT), including the Federal Aviation Administration and the Federal Highway Administration. They also noted that DOT is currently considering lowering its proposed random testing rate below 50 percent even though Federal Highway Administration data, for example, indicate a significantly higher positive rate than that experienced among NRC licensee employees. Another commenter pointed out that the lowered random testing rate for licensee employees subject to the NRC's FFD rule also would be consistent with the random rate applied in the Commission's own internal drug testing program.

Other commenters supported the reduction with the expectation of significant cost savings for licensees as a result of only testing approximately one half the number of employees now being tested. In this regard, the Nuclear Management and Resources Council (NUMARC) made reference to the November 1992 GAO report, "Employee Drug Testing Opportunities Exist To Lower Drug-Testing Program Costs" (GAO/GGD-93-13), which suggests reduced random testing rates as a means of producing cost efficiencies in

Federally mandated drug testing programs without adversely affecting program integrity.

Concerning the relative effectiveness of alternative random testing rates, some commenters believe that a 50-percent random testing rate would produce satisfactory deterrence of drug and alcohol abuse. This is particularly true in light of the fact that other FFD program elements, such as program awareness training and behavioral observation, and the access authorization program will continue to inhibit such behavior. Two commenters also supported the proposed change because it would lessen the disruption of workers' lives and reduce the invasion of privacy that random drug testing creates.

NRC Response

The NRC concurs with those commenters who stated that a 50-percent random testing rate as applied to licensee employees can be expected to provide sufficient deterrence to justify lowering the rate at this time. It also agrees with the observation that the access authorization program and other FFD program elements, such as policy communications and awareness training, behavioral observation, for cause testing, employee assistance programs, and the imposition of strict sanctions for violations of an FFD policy will continue to deter drug and alcohol abuse by most of the workforce. As some commenters noted, requiring fewer tests of licensee employees should decrease the privacy invasion experienced by some employees. It also should result in cost savings across the industry by reducing lost work hours and the number of tests to be administered.

The Commission recognizes that positive results in the nuclear power industry's random testing are generally among the lowest of any U.S. industry. Nonetheless, it realizes that there are many variables that can affect the rate of positive testing results and that relatively low positive test results, by themselves, are not the only indicator of the effectiveness of a testing program either on an industry-wide or a licensee program level. Some of the variables that could affect the testing results are the propensity of the population being tested to use drugs and alcohol, the effectiveness of other program elements, and the extent to which tested employees have been successful in subverting the testing process and avoiding detection.

The NRC does not have sufficient information about these or other factors that may influence testing results to be

able to determine that the decreasing positive rates reported by licensees are an unqualified indication of FFD program effectiveness. Nonetheless, the Commission is gratified to observe the decreasing positive rates in licensee employees' random test results during the past three years. The recently published NUREG/CR-5758, Volume 3, "Fitness for Duty in the Nuclear Power Industry: Annual Summary of Program Performance Reports," indicates that licensee employees' positive random testing rate in 1992 was 0.20 percent as compared to 0.28 percent in 1990 and 0.22 percent in 1991. There also have been decreasing positive rates for random testing of contractor and vendor personnel, viz., 0.56 percent in 1990, 0.55 percent in 1991, and 0.45 percent in 1992.

In making its decision, the Commission has considered these testing results along with the apparent continuing strength of the other elements of most licensees' FFD programs, the reduced invasion of employees' privacy interests, and the potential for cost savings. In light of this industry experience and of these beneficial effects, the Commission has concluded that it is reasonable at this time to lower the random testing rate for licensee employees and contractor and vendor personnel to 50 percent. The response to Comment 4 discusses the Commission's reasons for allowing reduction in the random testing rate for contractor and vendor personnel.

2 Comment: The random testing rate should be reduced to less than 50 percent.

Four commenters recommended that the random testing rate be reduced to less than 50 percent. The rates they recommended varied from 5 percent to 25 percent. Their central argument was that the random testing rate can be lowered substantially without threatening the effectiveness of the program. The very low rates of drug and alcohol positive tests that have been recorded by the nuclear industry during the first two years of FFD program operations are the basis for their recommendation. One licensee stated that most chronic drug users probably have been eliminated and currently there is not a serious drug or alcohol abuse problem in the industry. This commenter and NUMARC also cited the GAO study that found that the percentage of positives does not vary significantly among Federal agency drug testing programs, regardless of what random rate is used.

Another licensee emphasized that behavioral observation, not random testing, is the most potent tool in detecting drug abuse. Another

commenter recommended that the NRC consider further reductions because the effectiveness of other program elements makes a random rate of even 50 percent unnecessarily high.

Significant cost savings was given as the most compelling reason to reduce the random rate below 50 percent. One licensee estimated the industry would save up to \$30 million annually without degradation of the overall program.

NRC Response

As stated in the response to Comment 1 above, positive random testing results are not, by themselves, the only indicator of the FFD program's effectiveness in detecting substance abuse. The NRC does not have sufficient information about the many variables that could affect testing results to be able to determine that a lower random testing rate would maintain an acceptable level of program effectiveness. Therefore, the Commission believes that the industry's relatively low numbers of drug and alcohol positive random test results should not be used as the sole justification for lowering the random testing rate below 50 percent. While behavioral observation and for-cause testing are valuable program elements, there still must be a strong random testing program that provides an adequate level of detection and deterrence. The Commission continues to believe that it must choose a conservative and prudent random testing rate that maximizes both detection and deterrence of substance abuse while minimizing the monetary and social costs of such testing. The Commission believes that a 50-percent random testing rate will strike the proper balance between the dictates of public health and safety, the financial needs of licensees, and the privacy and other interests of workers subject to the testing requirement. Given the substantial unknowns currently associated with the true detection and deterrence effectiveness of alternative random testing rates as applied to the particular conditions of the nuclear power industry workforce, the Commission believes that it cannot establish a random testing rate lower than 50 percent for any segment of the industry at this time.

It should also be noted that relatively low positive test rates do not necessarily indicate that there is not a drug and alcohol abuse problem, as some commenters asserted. First, some users have become adept at avoiding detection and the use of increasingly effective subversion techniques may be one reason why random testing results

are decreasing. Second, while it may be that most of the chronic drug users who were in the industry when the program started have been detected or have left, there can be expected to be a continuing level of intermittent illegal drug use and alcohol abuse among industry employees. Such use is difficult to detect. The Commission concludes that the low positive random test results do not indicate that there has ceased to be a drug and alcohol abuse problem and that further reduction in the random testing rate would not be appropriate at this time.

In response to the commenters' reference to the GAO's observation that the percentage of positives does not vary significantly among Federal agency drug testing programs, the NRC notes that the GAO's objective in that report was to identify potential cost savings in Federal employee drug testing programs. Its objective did not include determination of the relative deterrent values of alternative random testing rates. In accomplishing its objective, the GAO properly concentrated on only the costs associated with Federal employee drug testing. It did not perform an in-depth analysis of the several variables that influence testing results nor of the very complex relationship between those variables and the deterrence value of testing. Such variables would include the inclination for drug or alcohol abuse among the employees in the various industries in which the Federal testing programs operate, the extent to which the strength and effectiveness of other, non-testing program elements, such as drug awareness training, may affect testing results, and the relative stringency of sanctions imposed by the various Federal agencies following positive test results. Because the GAO's objective was to address the cost rather than the deterrence effectiveness of testing, the NRC does not consider the commenter's reference to the GAO's observation to be a persuasive argument for reduced random testing rates.

The NRC will continue to monitor implementation of the rule and will modify the rule in response to industry experience, advances in technology, or other considerations to ensure that the rule is achieving the general performance objectives set forth in 10 CFR Part 26.

3. Comment: The random testing rate should be flexible and based on performance, such as the positive rate of random testing.

Twelve commenters recommended that the Commission allow some form of performance-based approach to determine the random testing rate. Under such a system, the random

testing rate would vary over time. This would depend on each licensee's or, alternatively, the industry's positive random test results from a previous period. One licensee, for example, suggested that each licensee's random testing rate should be based upon that particular licensee's previous 12-month testing results. Under this approach, a licensee would be subject to a minimum 50 percent random testing rate if it experienced a positive rate of greater than 0.50 percent during the previous 12 months. That licensee could reduce its random rate to 25 percent if it subsequently had a 12-month positive rate between 0.25 percent and 0.50 percent or to as low as 10 percent if its positive rate for the previous year was less than 0.25 percent. Three other licensees recommended similar schemes whereby a licensee's random rate would be determined by its own record of positive test results. One of these recommendations based the rate on the results of the previous 2 years rather than those of the previous 12 months.

NUMARC proposed that the industry-wide random testing rate be determined by the industry-wide random testing results from the previous period. This recommendation was endorsed by five licensees. Under NUMARC's proposed approach, the industry would be allowed by regulation to adjust its random testing rate based on testing results from the previous reporting period. All licensees would be required to test at a 100-percent random rate if the industry-wide positive rate were greater than 1.0 percent in the previous period, at a 50-percent random rate if the positive rate was between 0.50 percent and 1.0 percent, at a 25-percent random rate if the positive rate was between 0.25 percent and 0.50 percent, and at a 10-percent random rate if the positive rate was less than 0.25 percent. Two of the eleven licensees favoring a performance-based testing system provided a general recommendation that did not specify whether the random testing rate should be based on the positive testing results of each individual licensee, or on the results of the industry as a whole.

The commenters noted various potential advantages of adopting a performance-based approach to setting the random testing rate. One stated that adopting such an approach would be consistent with the NRC's initiative to identify performance-based programs that would be beneficial to the industry. Another listed cost savings, equity in that each licensee's random rate would be commensurate with its program performance, and an incentive for licensees to maximize program

conformance with the FFD rule as advantages of such an approach.

NRC Response

During development of 10 CFR part 26 in 1989, the Commission considered a variation of the flexible, performance-based random rate similar to the approaches recommended by these commenters. (See, for example, the NRC's response to Comment 7.4.2 in NUREG-1334, "Fitness for Duty in the Nuclear Power Industry: Responses to Public Comments.") At that time, the Commission decided against adopting a performance-based rate for various reasons. As stated above, positive random testing results are not the only indicator of detection and deterrence effectiveness or of overall random testing program performance to allow the testing rate to vary with testing results. Adopting a performance-based approach would tend to discourage the initiatives that the Commission is encouraging in 10 CFR 26.24(b) at 1. In § 26.24(b), the NRC allows licensees to implement programs with more stringent standards, for example, lower screening and confirmation cutoff levels and a broader panel of drugs than those specified in the rule. In Section 2.1 of Appendix A, licensees are permitted to test for any illegal drugs during a for-cause test or analysis of specimens suspected of being adulterated or diluted. Program performance data for the first three years of FFD program implementation have shown that those licensees using screening cutoff levels for marijuana that are lower than the maximum allowed 100 nanograms per milliliter (ng/ml) have had a higher percentage of confirmed positive results than those screening at 100 ng/ml. (See NUREG/CR-5758, Vols. 1-3.) Licensees that employ special measures to detect attempts to dilute specimens or flush metabolites from the body report that their positive rate is about doubled. This result is similar to data presented to the Department of Health and Human Services' Drug Testing Advisory Board on June 10, 1993, and reported in "The National Report on Substance Abuse" on June 18, 1993. (The study is currently undergoing peer review before publication.) Adopting a performance-based approach that allowed licensees to reduce their random testing rates as positive testing results declined would likely discourage licensees from adopting lower screening cutoff levels and taking measures to detect attempts by users to avoid detection.

Lastly, a performance-based approach would require the collection and analysis of performance data to provide

the bases for adjustments to the random testing rate. Such data is not currently collected by the licensees or the NRC. Previous efforts known to the NRC staff to identify and analyze the many candidate performance indicators for measuring the effectiveness of random testing have been inconclusive, primarily because of the numerous variables. Furthermore, assuming that the proper performance indicators can be developed, it would appear that the collection and analysis of data to support a performance-based approach would add a considerable administrative burden to both licensees and the NRC.

For all these reasons and until further experience is gained that would support a performance-based approach, the Commission declines to adopt such an approach to setting the random testing rate.

4. Comment: The reduction in the random testing rate should be applied to all workers.

Four of the 30 commenters on this issue—three unions and one licensee—supported the Commission's proposal that licensees maintain the 100 percent random testing rate for contractor and vendor employees. Their reasons included a concern for lack of commitment by contractor employees to maintaining the industry's high drug-free standard and the need for the higher testing rate to provide continued deterrence for contractor employers. One of the three unions recommended that long-term contractors should have the same lower random testing rate as that of licensee employees because test results of long-term contractors and licensee employees have been almost identical.

There were several issues consistently mentioned by those 26 commenters who opposed maintaining the 100 percent random testing rate for contractor and vendor employees. There was a general concern for unnecessary inconsistencies in random testing rates between Federal agencies. Commenters recommended that the NRC program be kept as consistent as possible with programs in other Federally regulated safety related industries. These include the IX IT programs that currently require contractors and vendors to be randomly tested at a 50-percent rate.

Various licensees cited the testing results from 1990 and 1991 which, in their opinion, create no statistically sound rationale for testing contractor and vendor employees at a rate different from that of licensee employees. They argued that while the contractor/vendor positive testing rate has been twice that of licensee employees, it is still low

enough to make unnecessary the expenditure of the resources necessary to maintain two separate random testing pools.

Various commenters noted that contractors and vendors are subject to the identical access authorization and other FFD program requirements as are licensee employees, including behavioral observation. These stringent requirements, in their view, obviate the need to keep the contractor/vendor random rate at 100 percent. Some also noted that the deterrent value of random testing is in the act of testing itself and not in what many consider to be a high rate of testing. Some commenters warned that keeping contractors and vendors at 100 percent could be construed as discriminatory against those employees and may be perceived as punitive rather than as a corrective measure. Two licensees also cited a study of the detection effectiveness of nine random testing rates published in NUREG/CR-5784, "Fitness for Duty in the Nuclear Power Industry: A Review of the First Year of Program Performance and an Update of the Technical Issues," which indicates that a 100 percent testing rate is only a little more effective than a 50-percent rate for detecting occasional drug users.

NRC Response

Although there is a difference between the positive results of random testing of licensee employees and those of contractor and vendor employees, the positive random testing rate of both groups has been less in each year since 1990, as stated in the response to Comment 1 above. While the contractor/vendor random testing positive rates continue to be about twice the rate for licensee employees and statistical analysis of the data shows that the difference in proportion between the contractors' and licensees' employees is not explained within statistical fluctuations (therefore, differences in the rates are statistically significant), the Commission agrees that the absolute numbers of positive test results of all categories of nuclear power workers are low. Therefore, the Commission will permit its licensees to lower the random testing rate to 50 percent for all persons covered by 10 CFR part 26. However, the Commission will continue to monitor licensee program performance and effectiveness and will make program adjustments as necessary.

In response to the comments regarding the study of the detection effectiveness of nine random testing rates published in NUREG/CR-5784, the Commission notes that the study explicitly dealt with only the

hypothetical detection effectiveness of those alternatives. It did not address their relative deterrence effectiveness. While it may be that the effectiveness of a 100-percent random testing rate for deterring occasional drug users could be slightly higher than that of a 50-percent rate, the Commission nonetheless believes that a 50-percent random testing rate will provide sufficient deterrence to drug and alcohol abuse by contractor and vendor employees.

With respect to commenters' concerns about unnecessary inconsistencies in random testing rates between Federal agencies, the Commission continues to believe that the random test rate for employees in the nuclear power industry need not be similar to the rates applied to employees in all, or even most, other Federal agencies or Federally mandated programs. Not all Federal agencies have identical safety concerns or responsibilities.

5. Comment: There should be no difference in the random testing rate for certain positions critical to the safe operation of a nuclear power plant.

Sixteen commenters responded to the Commission's question as to why certain positions critical to the safe operation of a nuclear power plant, such as the used reactor operators, should be excluded from any reduction of the random testing rate. All these commenters recommended against such differentiation. Two licensees stated that treating people in positions critical to safety differently from other employees could have a negative effect on the morale, self-image, and motivation of this group of highly trained and dedicated specialists. Another stated that all plant employees are critical to safe operation. Therefore a reduction in the random testing rate should apply to all employees. The potential for added record keeping requirements creating unnecessary burdens for the industry was another reason for not making this distinction. In the opinion of one commenter, the 1990–1991 industry-wide program performance data do not support testing people in positions critical to safety at a different rate than that applied to other licensee employees. Finally, one licensee cited potential problems getting union agreement to testing this classification of employees at a higher rate than other licensee personnel, subject to the FFD rule.

NRC Response

The essence and unanimity of these comments—that licensed operators and other employees in positions critical to the safe operation of a nuclear power plant should not be excluded from a

reduction of the random testing rate—is not surprising. These particular members of the nuclear power industry's workforce have collectively demonstrated their dedication to safe and efficient plant operations. As at least one commenter noted, the industry's program performance data for the first three years of operation do not support differentiating between people in safety-critical positions and other licensee employees insofar as the random testing rate is concerned. The 1992 program performance data, for example, show that eighteen of the industry's approximately 5,000 licensed operators tested positive for drugs or alcohol or otherwise violated the licensee's FFD policy; twelve of these were a result of random testing. When comparing these results to the 461 positive results out of 155,730 random tests administered to the industry workforce, the difference in proportion between the licensed operators and the industry workforce is within statistical fluctuations and the difference in the positive rates is not statistically significant. While the NRC expects licensees to continue to take action to drive this number of positives down even further, this record does not merit testing people in these positions at a rate different from that applied to other licensee employees. The Commission, therefore, concurs with the commenters' recommendation that certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators, should not be excluded from a reduction of the random testing rate.

6. Comment: Random testing is expensive and produces false positives. Furthermore, chronic users are able to avoid detection.

Two commenters, a power plant worker and a union, argued against the usefulness of continued random testing. One of these commenters stated that random testing produces false positives. These cost the industry large amounts of money in settlements and damage the public's perception of licensee's fairness. As additional support for this position, this commenter warned that chronic drug abusers are particularly adept at escaping detection from random testing by subverting the testing process. The other commenter recommended that random testing be eliminated because it is not effective in identifying workers who are impaired at the time urine samples are collected. For cause testing, in this commenter's opinion, is more effective because it more accurately reflects a worker's present ability to perform his/her job at the time he/she is tested. This commenter also stated that random

testing appears to be a means of having the NRC enforce the Controlled Substances Act which is not the NRC's responsibility.

NRC Response

The Commission has long been well aware of the types of FFD program-related concerns as addressed by these commenters. During the promulgation of 10 CFR part 26 in 1989, the Commission fully addressed these and many other such concerns. (See NUREG-1354, "Fitness for Duty in the Nuclear Power Industry: Responses to Public Comments.") At that time the NRC concluded, for example, that licensee FFD programs should be concerned not only with impairment, but also with worker reliability and trustworthiness. The NRC believes that any illegal drug use or alcohol abuse by a worker reflects upon his or her trustworthiness and reliability. Likewise, random testing is not intended nor has it ever functioned, as a means to enforce the Controlled Substances Act. Section 26.29(b) provides that licensees, contractors, and vendors shall not disclose test results to law enforcement officials unless those officials request such information under court order. It also is noted that there is no requirement to routinely provide such officials with testing results.

The Commission is well aware that there is a potential for false positive results and, therefore, has required numerous quality control measures and safeguards to prevent such occurrences. In Appendix D to NUREG/CR-5758, Volume 3, the testing process errors that were reported by licensees during the first three years under the FFD rule were analyzed. Of over 800,000 specimens tested, there were two false positives of personnel specimens reported by the laboratories, both due to administrative errors. In both cases, the quality assurance programs detected and corrected the problem.

Because of the NRC's particular concern with the degree to which the testing process can be subverted, the Commission staff has continued to track the ways in which workers have subverted testing processes in industries across the country. These efforts have resulted in staff recommendations for amending 10 CFR part 26 to introduce various means for combating subversion. Lastly, the Commission believes that the added protection of public health and safety that the FFD program provides is well worth the industry's costs of administering this program.

7. Comment: Maintaining two separate populations of workers for

random testing is an unnecessary and expensive burden.

Some of the commenters stated that requiring two random testing rates would force licensees to develop two separate testing programs. The resulting additional administrative and financial burdens would cancel out any savings resulting from reducing the licensee employee rate to 50 percent. NUMARC stated that the industry would save approximately \$4.1 million if the number of tests of contractor and vendor employees was cut in half.

NRC Response

Some of the comments noted above asserted that separate random testing rates for licensee employees and contractors/vendors would create additional administrative and financial burdens for licensees. Although this issue is somewhat moot since the Commission will permit licensees to reduce the random testing rate to 50 percent per year for all persons covered by Part 26, the Commission does not concur that conducting random testing using two random rates would have caused appreciably higher administrative or operating costs.

Presumably, most licensees' data bases already distinguish between licensee employees and contractor/vendor employees subject to testing. Numerous commenters on the initial rule in 1989 indicated that the workforce population should be separated so that permanent employees would not be tested at a much higher rate to make up for contractors who might not be on site when selected for testing (see comment/response 7.4.3 of NUREG-1354). The NRC staff understands that several licensees have divided their testing population as permitted by the rule. The number and identity of licensee employees in the testing pool remains rather constant over time. The number and identity of contractor/vendor employees in the testing pool, on the other hand, varies quite considerably over time depending on outages and other operational considerations. A licensee may choose to create more than one test population so that it may test portions of its workforce at a greater rate or reduce the burden on its employees from being tested at a higher rate to compensate for the testing of contractors and vendors not normally on site.

8. Comment: The Commission should modify certain portions of 10 CFR part 26 based on industry experience and lessons learned and incorporate numerous program enhancements discussed at various industry forums.

Eight commenters recommended that the Commission make future

modifications to certain portions of 10 CFR part 26 based on industry experience and lessons learned and incorporate numerous program enhancements as discussed at various industry forums.

NRC Response

The specific recommendations for ways in which part 26 can be improved and numerous other program enhancements are currently being considered by the NRC in conjunction with a general package of rule revisions currently under development.

Environmental Impact: Categorical Exclusion

The NRC has determined that this final rule is the type of action described in categorical exclusion 10 CFR 51.22(c)(2). Therefore, the NRC has not prepared an environmental impact statement nor an environmental assessment for this final rule.

Paperwork Reduction Act Statement

This final rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). These requirements and amendments were approved by the Office of Management and Budget, approval number 3150-0145.

Since the rule will permit licensees to reduce the random testing rate for their employees, the resulting reduction in the reporting and recordkeeping burden is expected to be an average of 223 hours per site, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch (MNRB-7714), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Desk Officer, Office of Information and Regulatory Affairs, NEQD-3019 (3150-0145) Office of Management and Budget, Washington, DC 20503.

Regulatory Analysis

The NRC has prepared a regulatory analysis for this regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The analysis is available for inspection in the NRC Public Document Room, 2120 L Street NW (Lower Level), Washington, DC. Single copies of the analysis may be obtained

from Loren L. Bush, Jr., Division of Radiation Safety and Safeguards, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 504-2944.

Regulatory Flexibility Act Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this rule will not have a significant economic impact on a substantial number of small entities. This rule affects only the licensing and operation of nuclear power plants and activities associated with the possession or transportation of Category 1 material. The companies that own these plants do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the Small Business Size Standards issued by the Small Business Administration in 13 CFR part 121.

Backfit Analysis

The rule represents a relaxation from current part 26 requirements for drug testing since the rule permits (but does not require) licensees to reduce the random testing rate for all persons covered by the rule. Accordingly, the rule does not represent a backfit as defined in 10 CFR 50.109(a)(1), and a backfit analysis is not required for this rule.

List of Subjects in 10 CFR Part 26

Alcohol abuse, Alcohol testing Appeals, Chemical testing, Drug abuse, Drug testing, Employee assistance programs, Fitness for duty, Hazardous materials transportation, Management actions, Nuclear materials, Nuclear power plants and reactors, Penalties, Protection of information, Radiation protection, Reporting and recordkeeping requirements, Sanctions, Special nuclear materials.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 552 and 553, the NRC is adopting the following amendment to 10 CFR part 26.

PART 26—FITNESS FOR DUTY PROGRAMS

1. The authority citation for part 26 continues to read as follows:

Authority: Secs. 53, 81, 103, 104, 107, 161, 68 Stat. 930, 935, 936, 937, 939, 948, as amended (42 U.S.C. 2073, 2111, 2112, 2133, 2134, 2137, 2201); secs. 201, 202, 206, 88 Stat. 1242, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846).

2. In § 26.24 paragraph (a)(2) is revised to read as follows:

§ 26.24 Chemical and alcohol testing

(a) * * *

(2) Unannounced drug and alcohol tests imposed in a statistically random and unpredictable manner so that all persons in the population subject to testing have an equal probability of being selected and tested. The tests must be administered so that a person completing a test is immediately eligible for another unannounced test. As a minimum, tests must be administered on a nominal weekly frequency and at various times during the day. Random testing must be conducted at an annual rate equal to at least 50 percent of the workforce.

* * * * *

Dated at Rockville, Maryland, this 29th day of December, 1993.

For the Nuclear Regulatory Commission,
John C. Hoyle,

Acting Secretary of the Commission
[FIR Doc. 94-131 Filed 1-4-94, 8:45 am;
BILLING CODE 7500-01-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 83-NM-206-AD; Amendment 39-8783, AD 83-24-51]

Airworthiness Directives; Airbus Industrie Model A310 and A300-600 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This document publishes in the *Federal Register* an amendment adopting Airworthiness Directive (AD) T93-24-51 that was sent previously to all known U.S. owners and operators of all Airbus Model A310 and A300-600 series airplanes by individual telegrams. This AD requires repetitive operational tests of feel and limitation computers (FLC) 1 and 2. This amendment is prompted by a report that the pitch control on a Model A300-600 series airplane operated with stiffness. The actions specified by this AD are intended to prevent stiff operation of the pitch control and undetected loss of rudder travel limitation function.

DATES: Effective January 20, 1994, to all persons except those persons to whom it was made immediately effective by telegraphic AD T93-24-51, issued

Proposed Rules

Federal Register

Vol. 58, No. 55

Wednesday, March 24, 1993

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

NUCLEAR REGULATORY COMMISSION

10 CFR Part 26

RIN 3150-AE36

Modifications to Fitness-for-Duty Program Requirements

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) proposes to amend its regulations to modify current Fitness-for-Duty Program (FFD) requirements. The proposed amendments would apply to all licensees authorized to construct or operate a nuclear power reactor pursuant to 10 CFR part 50. The proposed rule is intended to permit licensees to reduce the random testing rate for licensee employees but maintain the 100 percent random testing rate for contractor and vendor employees.

DATES: The comment period expires June 22, 1993. Comments received after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

ADDRESSES: Mail comments to: The Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, ATTN: Docketing and Service Branch.

Deliver comments to: One White Flint North, 11555 Rockville Pike, Rockville, Maryland between 7:30 am and 4:15 pm on Federal workdays.

Copies of SECY-92-271, the draft regulatory analysis, and the comments received may be examined at: the NRC Public Document Room, 2120 L Street NW (Lower Level), Washington, DC.

Copies of NUREG/CR-5758 (Volumes 1 and 2) and NUREG/CR-5784 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available

from the National Technical Information Service, 5282 Port Royal Road, Springfield, VA 22161. A copy is available for inspection and/or copying for a fee in the NRC Public Document Room, 2120 L Street NW (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT:
Loren L. Bush, Jr., Reactor Safeguards Branch, Division of Radiation Safety and Safeguards, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone: (301) 504-2944.

SUPPLEMENTARY INFORMATION:

Background

The NRC is proposing to amend its regulations governing "Fitness-for-Duty Programs," as part of its continuing effort to improve its regulations.

The NRC has reviewed experiences gained since publication of the current rule on June 7, 1989 (54 FR 24468) and implementation by power reactor licensees on January 3, 1990. The NRC has determined that it is appropriate to permit a reduction in the random testing rate for utility employees but maintain the 100 percent random testing rate for contractors and vendors.

During the FFD rulemaking process, the NRC had specifically invited the public to comment on the rates of random testing (53 FR 36795 at 36796; September 22, 1988). Public comments strongly opposed a proposed 300 percent rate; the Nuclear Management and Resources Council (NUMARC) and most licensees proposed a 100 percent rate. These commenters also recommended that this rate be reevaluated on the basis of utility experience and be reduced to 25 percent, if warranted (54 FR 24468 at 24472; June 7, 1989). As a result, the Commission indicated that it would consider reducing testing rates after several years if it obtained information that experience in the industry with the existing rate had been positive (54 FR 24468 at 24474; June 7, 1989). On November 7, 1991, the Commission directed the staff to report on work that has been done on the deterrent effect of different testing rates with recommendations of the applicability of the work to the nuclear industry.

SECY-92-271 informed the Commission that no research exists that

directly addresses the issue of whether reducing the random testing rate affects the deterrent effect of drug testing and presented options for consideration by the Commission. On October 20, 1992, the Commission instructed the staff to prepare a change to 10 CFR part 26 that would permit licensees to randomly test their employees at a rate equal to 50 percent.

Discussion

The purpose of random testing was discussed in the Federal Register in the Commission's notice of proposed rulemaking published on September 22, 1988 (53 FR 36795 at 36810). An extract of that discussion follows:

"The purpose of random (unannounced) testing is to provide reasonable assurance that employees are fit for duty by identifying current drug users and by deterring drug users from further use or potential users from initial use. The frequency with which an individual is tested is relevant to both the identification and deterrence goals of the drug testing program. Generally, the more frequent the testing, the greater the deterrent effect and the better the detection capabilities. However, very frequent testing may result in unacceptable economic or social costs. Although there is no research upon which the testing frequency may be based, it seems reasonable to assume that:

- Any form of unannounced testing would provide some level of deterrence.
- There would be little deterrent if the testing dates were predictable and the drug user knew he was not immediately susceptible to another test.
- Testing each day would provide more of a deterrent than testing once each week or month, especially if the daily activity was highly visible.
- Deterrence is related to either the actual or perceived probability of detection.
- The actual probability of detection is related to the type of drug, dose, frequency of use, rate of metabolism and excretion from the body, and the frequency of testing.
- The perceived probability of detection is related to the frequency of testing, the "publicity" given positive findings and sanctions imposed, and the abuser's knowledge of the rate of metabolism and actual probability of detection."

The NRC recognizes that not all workers are deterred and that random testing does contribute significantly to the detection of substance abuse by those few who are not deterred. The workforce may be divided into three

groups concerning the deterrent effect of random testing.

- The vast majority of workers do not abuse substances because of any of several reasons, usually concerns for health. Random testing does not influence the behavior of this group. There would be no deterrent effect.

- A small percentage of workers are chronic abusers. Random testing would have little, if any, influence on this group. There would be no deterrent effect. Random testing would eventually detect these people.

- An unknown percentage of workers are, or could be tempted to be, occasional users and may be able to abstain if properly encouraged. The deterrence effect of random testing would cause them to refrain from initial use or to modify their behavior if they are occasional users. Random testing would have the greatest influence on this group.

The random testing rate has been an issue with other Federally regulated or administered random testing programs. The issue is the balancing of program goals. The optimal random drug testing program is one that maximizes both detection and deterrence of substance abuse while minimizing monetary and social costs (e.g., adverse impacts on employee morale). To maximize detection, other factors remaining constant, it is assumed that more testing will result in more detection. In maximizing deterrence, random testing rates have been influenced by assumptions that the probability of being selected for testing would have a deterrent effect and that the higher the testing rate the greater the deterrent effect (although the incremental deterrent effect would likely diminish as test rates increase). These assumptions are based on both intuition and earlier efforts by the Department of Defense that indicated a greater deterrent effect at higher random testing rates. In minimizing monetary and social costs when establishing a minimum random testing rate, factors such as the level of intrusion on an individual's privacy and the incremental costs of additional testing are considered. In attempting to establish optimal testing rates that are reasonable and consistent with each agency's unique needs, Federal agencies have established programs with random testing rates that vary from 4 percent to 200 percent.

Perceptions of risk are believed to play a large role in deterring substance abuse. For example, from studies of drunk driving and deterrence measures, researchers conclude that the risk of incurring strong sanctions appears to

have a strong deterrent effect on substance abuse. In addition, research on human decisionmaking and risk assessment suggests that an individual's perceptions of the risk of being tested and the risk of drug use being detected are not based on rational calculations of probabilities alone. Individuals tend to overestimate the likelihood of low probability events (being selected for testing) and tend to incorporate into their decisionmaking the information that is most easily recalled.

Deterrence is believed to be a function of the perceived risk of being detected, the severity of the sanction, and the swiftness with which it is applied compared with the gratification derived from the illicit behavior. Several conclusions may be drawn from review of the available literature:

- (1) The deterrent effect of random drug and alcohol testing programs may not be sensitive to incremental adjustments in random test rates. While random testing remains critical in deterring drug abuse, it is only one of the forces acting to deter drug use. Other important factors include the elements of a broadbrush program (e.g., awareness training, pre-access and for-cause testing, behavioral observation, counseling, and removals) as well as organizational and workforce demographic factors and drug-specific factors.

- (2) Assuming equal testing rates and procedures, there will be a greater deterrent effect when the risks of drug abuse—including the probability of detection—are well understood than when they are not.

- (3) Some users will remain undeterred. Based on the findings of the military and research on drunk drivers, some part of the population continues to abuse drugs or alcohol even when detection and sanctions are highly certain. Regardless of the random testing rate, some users may not cease their drug use under any condition. Thus, other program elements, such as behavioral observation, for-cause testing, and employee assistance programs, are important to provide additional assurances to detect and remove chronic drug abusers from the workforce. However, a higher random testing rate would more rapidly detect these undeterred users (see Appendix C to NUREG/CR-5784).

Studies on random testing have found that higher testing and discharge rates may result in higher overall detection of drug abuse in the workforce (see Durbin, et al., 1991). In terms of deterrence, continued drug use by identified users has been shown to be a substantial factor in overall drug use rates.

suggesting that a substantial number of those testing positive for drugs are not deterred (Osborn & Sokolov, 1990; Stoloff, 1985).

The NRC considered several alternatives in determining the appropriate random drug testing rate for the nuclear power industry. The NRC considered conducting a study that would reduce the random testing rate of some licensees to 50 percent (experimental sites) and analyze that data against the data of licensees who would continue a 100 percent testing rate (control sites). The experiment would have to run for several years to allow for delayed effects caused by adjusted testing rates and to obtain a sufficient number of test results. The design of the study and the analysis of the results would have taken an additional year. The NRC has decided not to conduct such a study because: (i) The relatively long period of time required to collect and analyze the data would delay the Commission's action on this issue, and (ii) variables from site to site could mask any statistical differences between data from two test groups in the small absolute number of expected positive tests.

The NRC considered conducting an attitudinal study which would attempt to show worker attitudes toward, and their understanding of, random testing. It was hoped that this study would provide a better understanding of how this particular component of the FFD program deters substance abuse and would help determine whether the perceived deterrent effect varies as the rate of random testing varies. The NRC has decided not to conduct this study because:

- (i) The appreciable time that would be required to design and administer the survey and obtain OMB approval would delay the Commission's action on the issue, (ii) the study would tap worker attitudes rather than their behavior, and (iii) the results of the survey, by themselves, would not provide a solid basis for changes in the random testing rate.

The NRC also considered awaiting and evaluating the results of the Federal Railroad Administration's test program (56 FR 22905; May 17, 1991) which is now expected to be completed in late 1993. The NRC has decided not to await the results of this study because several factors may limit the application of the study to the nuclear industry:

- (i) The railroad industry has fewer units (i.e., there are fewer carriers than there are utilities) and more employees per unit than the nuclear power industry;

(ii) The flexibility provided in part 26 regarding cutoff levels, sanctions, and so forth suggests a potential for substantial variability of the deterrent effects within the nuclear power industry;

(iii) A rail line's employees are located across the country and, thus, are subject to a range of local drug-use patterns and contexts. By contrast, the employees of a particular nuclear power plant tend to be located within a single geographic region, with one prevailing set of local drug-use patterns; and

(iv) The recently reported rate of substance abuse detected through random testing in the railroad industry is quadruple that in the nuclear power industry (approximately 1 percent as against 0.25 percent for power reactor licensee employees for the first 2 years).

Taking into account the uncertainties involved and the low rate of positive tests, the NRC has concluded that lowering the random testing rate from 100 percent to 50 percent would cause little, if any, decrease in the deterrent effect of random testing when applied to

licensee employees, and that the rate of positive random tests for licensee employees is not likely to increase. However, experiences with random testing gained since publication of the rule have shown contractor and vendor employees testing positive at a rate approximately double that for licensee employees. Because of the higher rate of positive tests for contractor and vendor employees, the NRC is not proposing at this time to lower the rate for that population. See chart.

RANDOM TESTING

	1990 #sites/s positive	1991 #sites/s positive	2-year totals #sites/s positive	2-year positive rate (percent)
Long-Term Contractors/Vendors	8,810/044	7,500/023	16,410/067	0.41
Short-Term Contractors/Vendors	39,596/229	45,277/267	84,873/496	.58
All Contractors/Vendors	48,506/273	52,777/290	101,283/563	1.56
Licensee Employees	100,237/277	101,041/220	201,278/497	8.25

¹The range for contractor employees during CY 1991 was between 0% and 1.53%, with 7 sites having rates greater than 1.0%.

²The range for licensee employees during CY 1991 was between 0% and 0.87%, with 5 sites having rates higher than 0.5%.

In conclusion, the NRC believes that the fitness-for-duty program can be revised to permit licensees to lower the random testing rate for licensee employees without significant impact on the overall effectiveness of the program. Therefore, the Commission is proposing that § 26.24(a)(2) be modified to permit licensees to randomly test their employees at an annual rate equal to at least 50 percent. This would not preclude licensees from testing the employee workforce, or portions thereof, at a higher rate. For the present, the minimum rate of testing for contractor and vendor employees, whether under the licensee's program or an approved contractor or vendor program will remain at 100 percent. The NRC will continue to monitor implementation of the rule and will modify the rule in response to industry experience, advances in technology, or other considerations to ensure that the rule is achieving the general performance objectives set forth in 10 CFR 26.10.

Assuming that the deterrent effect of the 50 percent random testing rate were to be about the same as that for a 100 percent rate, the proposed rule could result in a reduction in the number of cases of drug and alcohol use by licensee employees detected each year through random testing. Recognizing this potential reduction in individuals being detected, the NRC is specifically interested in comments as to whether

certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators, should be excluded from any reduction of the random testing rate.

Bibliography

- Durbin, N., Moore, C., Grant, T., Fleming, T., Hunt, P., Martin, R., Murphy, S., Neath, J., Wilson, R., Bittner, A., Branswell, A., Macaulay, J., Olson, J., Terrill, E., & Toquam, J. (1991). "Fitness for Duty in the Nuclear Power Industry: A Review of the First Year of Program Performance and an Update of the Technical Issues (NUREG/CR-5784)." Washington, DC: Nuclear Regulatory Commission.
- Osborne, C.E., & Solakov, J.J. (1990). "Drug Use Trends in a Nuclear Power Facility: Data From a Random Screening Program." In S.W. Gust, J.M. Walsh, L.B. Thomas, and D.J. Crouch (Eds.), *Drugs in the Workplace: Research and Evaluation Data, Volume II*. NIDA Research Monograph No. 100. Rockville, MD: National Institute on Drug Abuse, 25-43.

Soloff, P.H. (1985). *The Effectiveness of Urinalysis as a Deterrent to Drug Use*, p. 11. Washington, DC: Department of the Navy.

Environmental Impact: Categorical Exclusion

The NRC has determined that this proposed rule is the type of action described in categorical exclusion 10 CFR 51.22(c)(2). Therefore, neither an environmental impact statement nor an environmental assessment has been prepared for this proposed rule.

Paperwork Reduction Act Statement

This proposed rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). This rule has been submitted to the Office of Management and Budget for review and approval of the paperwork requirements.

Since the proposed rule would reduce the random drug testing rate for licensee employees from 100 percent to 50 percent, public reporting and recordkeeping burden for the collection of information is expected to be reduced. The resulting reduction in burden is estimated to average 146 hours per site, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the estimated burden reduction or any other aspect of this collection of information, including suggestions for further reducing reporting burden, to the Information and Records Management Branch (MNTB-7716), U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-3019, (3150-0146), Office of Management and Budget, Washington, DC 20503.

Regulatory Analysis

The Commission has prepared a draft regulatory analysis on this proposed rule. The analysis examines the benefits, cost savings, and costs of the alternatives considered by the Commission. The draft analysis is available for a fee at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC. Single copies may be obtained by writing to the U.S. Nuclear Regulatory Commission, Washington, DC 20555. Single copies of the analysis may be obtained from Loren L. Bush, Jr., Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

The Commission requests public comment on the draft regulatory analysis. Comments on the draft analysis may be submitted to the NRC as indicated under the **ADDRESSES** heading.

Regulatory Flexibility Act Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this rule will not have a significant economic impact on a substantial number of small entities. This proposed rule affects only the licensing and operation of nuclear power plants and activities associated with the possession or transportation of Category I material. The companies that own these plants do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the Small Business Size Standards issued by the Small Business Administration in 13 CFR part 121.

Backfit Analysis

The NRC has determined that the backfit rule, 10 CFR 50.109, does not apply to this proposed rule, and therefore, that a backfit analysis is not required for this proposed rule, because these amendments do not impose more stringent safety requirements on 10 CFR part 50 licensees.

List of Subjects in 10 CFR Part 26

Alcohol abuse, Alcohol testing, Appeals, Chemical testing, Drug abuse, Drug testing, Employee assistance programs, Fitness for duty, Management actions, Nuclear power reactors, Protection of information, Reporting and recordkeeping requirements, Sanctions.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is proposing to adopt the following amendment to 10 CFR part 26.

PART 26—FITNESS FOR DUTY PROGRAMS

1. The authority citation for part 26 continues to read as follows:

Authority: Secs. 83, 81, 103, 104, 107, 161, 68 Stat. 930, 935, 936, 937, 939, 948, as amended (42 U.S.C. 2073, 2111, 2112, 2133, 2134, 2137, 2201); secs. 201, 202, 206, 88 Stat. 1242, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846).

2. In § 26.24, paragraph (a)(2) is revised to read as follows:

§ 26.24 Chemical testing.

(a) * * *

(2) Unannounced drug and alcohol tests imposed in a statistically random and unpredictable manner so that all persons in the population subject to testing have an equal probability of being selected and tested. The tests must be administered so that a person completing a test is immediately eligible for another unannounced test. As a minimum, tests must be administered on a nominal weekly frequency and at various times during the day. Random testing of contractor and vendor employees must be conducted at an annual rate equal to at least 100 percent of that workforce. Random testing of licensee employees must be conducted at an annual rate equal to at least 50 percent of that workforce.

* * * * *

Dated at Rockville, Maryland, this 18th day of March, 1993.

For the Nuclear Regulatory Commission,

Samuel J. Chalk,

Secretary of the Commission

[FR Doc. 93-6680 Filed 3-23-93; 8:45 am]

BILLING CODE 7580-01-P

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 39**

[Docket No. 92-NM-221-AD]

Airworthiness Directives; McDonnell Douglas Model DC-10 Series Airplanes and KC-10A (Military) Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the supersession of an existing airworthiness directive (AD), applicable to McDonnell Douglas Model DC-10 series airplanes and KC-10A (military) airplanes, that currently requires the implementation of a Structural Inspection Document (SID) program of structural inspections

to detect fatigue cracking, and repair or replacement, as necessary, to ensure continued airworthiness as these airplanes approach the manufacturer's original fatigue design life goal. This action would, among other things, revise the existing SID sampling program to include some new inspection procedures for certain Principal Structural Elements (PSE). This proposal is prompted by new data submitted by the manufacturer indicating that certain revisions to the SID program are necessary in order to increase the confidence level of the statistical program to ensure timely detection of fatigue cracks in PSE's. The actions specified by the proposed AD are intended to prevent fatigue cracking that could compromise the structural integrity of these airplanes.

DATES: Comments must be received by May 17, 1993.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-103, Attention: Rules Docket No. 92-NM-221-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 8 a.m. and 3 p.m., Monday through Friday, except Federal holidays.

The service information referenced in the proposed rule may be obtained from McDonnell Douglas Corporation, P.O. Box 1771, Long Beach, California 90845-1771, Attention: Business Unit Manager, Technical Publications—Technical Administrative Support, C1-L5B. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Los Angeles Aircraft Certification Office, 3229 East Spring Street, Long Beach, California 90806-2425.

FOR FURTHER INFORMATION CONTACT: Maureen Moreland, Aerospace Engineer, Airframe Branch, ANM-121L, FAA, Transport Airplane Directorate, Los Angeles Aircraft Certification Office, 3229 East Spring Street, Long Beach, California 90806-2425; telephone (310) 988-5238; fax (310) 988-5210.

SUPPLEMENTARY INFORMATION:**Comments Invited**

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications

section 552b of title 5, United States Code.

Any person may observe meetings, or portions thereof, of advisory panels which are open to the public, and may be permitted to participate in the panel's discussions at the discretion of the panel chairman and with the approval of the full-time Federal employee in attendance.

If you need special accommodations due to a disability, please contact the Office of Special Constituencies, National Endowment for the Arts, 1100 Pennsylvania Avenue, NW, Washington, DC 20506, 202/682-6532, TTY 202/682-6496, at least seven (7) days prior to the meeting.

Further information with reference to this meeting can be obtained from Ms. Yvonne M. Sabine, Advisory Committee Management Officer, National Endowment for the Arts, Washington, DC 20506, or call (202) 682-5439. Yvonne M. Sabine, Director, Panel Operations, National Endowment for the Arts [FIR Doc. 93-6627 Filed 3-23-93, 8:45 am] BILLING CODE 7500-01-B

NUCLEAR REGULATORY COMMISSION

Documents Containing Reporting or Recordkeeping Requirements; Office of Management and Budget (OMB); Review

AGENCY: U.S. Nuclear Regulatory Commission (NRC).

ACTION: Notice of the OMB review of information collection.

SUMMARY: The NRC has recently submitted to the OMB for review the following proposal for the collection of information under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. chapter 35).

1. Type of submission, new, revision, or extension: Revision.

2. The title of the information collection: Proposed Rule, "10 CFR part 26 Modification to the Random Drug Testing Rate for Licensee Employees".

3. The form number if applicable: Not applicable.

4. How often the collection is required: On occasion.

5. Who will be required to report: Nuclear power plant licensees.

6. An estimate of the number of reports annually: A reduction of 30,000 drug tests and associated records.

7. An estimate of the total number of hours needed annually to complete the requirement: 10,833 hours of burden reduction (an average of 146 hours of burden reduction per site).

8. An indication of whether section 3504(b), Public Law 96-511 applies: Applicable.

9. Abstract: 10 CFR part 26 of NRC's regulations, "Fitness-for-Duty Programs," requires licensees authorized to construct or operate a nuclear power plant pursuant to Part 50 to implement fitness-for-duty programs to assure that personnel are not under the influence of any substance or mentally or physically impaired, to retain certain records associated with the management of these programs, and to provide reports concerning significant events. A proposed amendment to this regulation would permit licensees to reduce the random testing rate of licensee employees for drugs and alcohol to 50 percent but maintain the 100 percent random testing rate for contractor and vendor employees.

Copies of the submittal may be inspected or obtained for a fee from the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, DC 20555.

Comments and questions should be directed to the OMB reviewer, Ronald Minick, Office of Information and Regulatory Affairs (3150-0146), NEOB-3019, Office of Management and Budget, Washington, DC 20503.

Comments can also be submitted by telephone at (202) 395-3084.

The NRC Clearance Officer is Brenda Jo Shelton, (301) 492-8132.

Dated at Bethesda, Maryland, this 16th day of March, 1993.

For the Nuclear Regulatory Commission,
Gerald F. Crawford,

Designated Senior Official for Information Resources Management

[FIR Doc. 93-6623 Filed 3-23-93, 8:45 am]
BILLING CODE 7500-01-B

Application for a License To Export a Utilization Facility

Pursuant to 10 CFR 110.70(b) "Public notice of receipt of an application", please take notice that the Nuclear Regulatory Commission has received the following request to amend Export License XRI37. A copy of the amendment request is on file in the Nuclear Regulatory Commission's Public Document Room located at 2120 L Street, NW., Washington, D.C.

A request for a hearing or petition for leave to intervene may be filed within 30 days after publication of this notice in the Federal Register. Any request for hearing or petition for leave to intervene shall be served by the requestor or petitioner upon the applicant, the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555; the Secretary, U.S. Nuclear Regulatory Commission; and the Executive Secretary, U.S. Department of State, Washington, DC 20520.

In its review of a request to amend a license to export a utilization facility as defined in 10 CFR part 110 and noticed herein, the Commission does not evaluate the health, safety or environmental effects in the recipient nation of the facility to be exported. The information concerning this request to amend follows:

NRC EXPORT LICENSE AMENDMENT

Name of applicant, date of application, date received, application number	Description	Value	End use	Country of destination
ABE Combustion Eng., 03/09/93, 03/11/93, XRI37/02	\$3,700,000,000	4128 MW, Taiwan Power Nuclear Units, Lungmen 1 and 2	Amended to increase power to 4128 MW (-1350 MWs), increase \$ value from \$800,000,000 to \$3,700,000,000, change names from Taiwan Power Nuclear Units 7 and 8 to Taiwan Power Nuclear Units Lungmen 1 and 2, and revise description of items authorized for export.	Taiwan



OFFICE OF THE
SECRETARY

ACTION - Muri AE38-2
PDR 002
Cys: Taylor
Snieszek
Thompson
Blaha
LBush
BShelton
DMeyer

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20585

IN RESPONSE, PLEASE REFER TO: M931221B

December 21, 1993

MEMORANDUM FOR: James M. Taylor
Executive Director for Operations

FROM: Samuel J. Chilk, Secretary

SUBJECT: STAFF REQUIREMENTS - AFFIRMATION/DISCUSSION
AND VOTE, 11:30 A.M., TUESDAY, DECEMBER 21,
1993, COMMISSIONERS' CONFERENCE ROOM, ONE
WHITE FLINT NORTH, ROCKVILLE, MARYLAND (OPEN
TO PUBLIC ATTENDANCE)

I. SECY-93-302 - Modifications to Fitness-for-Duty Program
Requirements Concerning the Random Drug Testing Rate

The Commission, by a 4-0 vote, approved an amendment to its fitness-for-duty regulations which permits licensees to reduce the random testing rate for all persons covered by 10 CFR Part 26 to an annual rate equal to 50 percent.

The FRN should be: 1) revised to conform with the attached pages, 2) reviewed by the Rules Review and Directives Branch, ADM, for conformity with the requirement of the Federal Register, and 3) returned for signature and publication.

-EBD- (NRR) (SECY Suspense: 12/30/93) 9200240

Attachments:

As stated

cc: The Chairman
Commissioner Rogers
Commissioner Remick
Commissioner de Planque
OGC
OCA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR - Advance
DCS - P1-24

9312270119

other program elements, and the extent to which tested employees have been successful in subverting the testing process and avoiding detection.

The NRC does not have sufficient information about these or other factors that may influence testing results to be able to determine that the decreasing positive rates reported by licensees are an unqualified indication of FFD program effectiveness. Nonetheless, the Commission is gratified to observe the continuing downward trend in licensee employees' positive random test results during the past three years. The recently published NUREG/CR-5758, Volume 3, "Fitness for Duty in the Nuclear Power Industry: Annual Summary of Program Performance Reports," indicates that licensee employees' positive random testing rate in 1992 was 0.20 percent as compared to 0.28 percent in 1990 and 0.22 percent in 1991. There has been ^{also have} a corresponding downward trend in the positive rates for random testing of contractor and vendor personnel, viz., 0.56 percent in 1990, 0.55 percent in 1991, and 0.45 percent in 1992.

In making its decision, the Commission has considered these testing results along with the apparent continuing strength of the other elements of most licensees' FFD programs, the reduced invasion of employees' privacy interests, and the potential for cost savings. In light of this industry experience and of these beneficial effects, the Commission has concluded that it is reasonable at this time to lower the random testing rate for licensee employees and contractor and vendor personnel to 50 percent. The response to Comment 4 discusses the Commission's reasons for allowing reduction in the random testing rate for contractor and vendor personnel.

2. Comment. The random testing rate should be reduced to less than 50 percent.

testing rates as positive testing results declined would likely discourage licensees from adopting lower screening cutoff levels and taking measures to detect attempts by users to avoid detection.

Lastly, a performance-based approach would require the collection and analysis of performance data to provide the bases for adjustments to the random testing rate. Such data is not currently collected by the licensees or the NRC. Previous efforts known to the NRC staff to identify and analyze the many candidate performance indicators for measuring the effectiveness of random testing have been inconclusive, primarily because of the numerous variables. Furthermore, assuming that the proper performance indicators can be developed, it would appear that the collection and analysis of data to support a performance-based approach would add a considerable administrative burden to both licensees and the NRC.

For all these reasons and until further experience is gained that would support a performance-based approach, the Commission declines to adopt such an approach to setting the random testing rate. OK

4. Comment. The reduction in the random testing rate should be applied to all workers.

Four of the 30 commenters on this issue - three unions and one licensee - supported the Commission's proposal that licensees maintain the 100-percent random testing rate for contractor and vendor employees. Their reasons included a concern for lack of commitment by contractor employees to maintaining the industry's high drug-free standard and the need for the higher testing rate to provide continued deterrence for contractor employees. One of

the three unions recommended that long-term contractors should have the same lower random testing rate as that of licensee employees because test results of long-term contractors and licensee employees have been almost identical.

There were several issues consistently mentioned by those 26 commenters who opposed maintaining the 100-percent random testing rate for contractor and vendor employees. There was a general concern for unnecessary inconsistencies in random testing rates between Federal agencies. Commenters recommended that the NRC program be kept as consistent as possible with programs in other Federally regulated safety-related industries. These include the DOT programs that currently require contractors and vendors to be randomly tested at a 50-percent rate.

Various licensees cited the testing results from 1990 and 1991 which, in their opinion, create no statistically sound rationale for testing contractor and vendor employees at a rate different from that of licensee employees. They argued that, while the contractor/vendor positive testing rate has been twice that of licensee employees, it is still low enough to make unnecessary the expenditure of the resources necessary to maintain two separate random testing pools.

Various commenters noted that contractors and vendors are subject to the identical access authorization and other FFD program requirements as are licensee employees, including behavioral observation. These stringent requirements, in their view, obviate the need to keep the contractor/vendor random rate at 100 percent. Some also noted that the deterrent value of random testing is in the act of testing itself and not in what many consider to be a high rate of testing. Some commenters warned that keeping contractors and vendors at 100 percent could be construed as discriminatory against those

employees and may be perceived as punitive rather than as a corrective measure. Two licensees also cited a study of the detection effectiveness of nine random testing rates published in NUREG/CR-5784, "Fitness for Duty in the Nuclear Power Industry: A Review of the First Year of Program Performance and an Update of the Technical Issues," which indicates that a 100-percent testing rate is only a little more effective than a 50-percent rate for detecting occasional drug users.

NRC Response

or explain how the numbers are statistically significant enough to show a "downward trend"

Although there is a difference between the positive results of random testing of licensee employees and those of contractor and vendor employees, the positive random testing rate of both groups has been less in each year since 1990. ~~there is a general downward trend of the results of random testing, as stated in the response to Comment 1 above.~~ While the contractor/vendor random testing positive rates continue to be about twice the rate for licensee employees and statistical analysis of the data shows that the difference in proportion between the contractors' and licensees' employees is not explained within statistical fluctuations (therefore, differences in the rates are statistically significant), the Commission agrees that the absolute numbers of positive test results of all categories of nuclear power workers are low. Therefore, the Commission ~~agrees with those commenters who contend that the testing results during the past three years do not justify making a distinction between these groups insofar as the random testing rate is concerned and~~ will permit its licensees to lower the random testing rate to 50 percent for all persons covered by 10 CFR Part 26. However, the Commission

|

will continue to monitor licensee program performance and effectiveness and will make program adjustments as necessary.

In response to the comments regarding the study of the detection effectiveness of nine random testing rates published in NUREG/CR-57B4, the Commission notes that the study explicitly dealt with only the hypothetical detection effectiveness of those alternatives. It did not address their relative deterrence effectiveness. While it may be that the effectiveness of a 100-percent random testing rate for deterring occasional drug users could be slightly higher than that of a 50-percent rate, the Commission nonetheless believes that a 50-percent random testing rate will provide sufficient deterrence to drug and alcohol abuse by contractor and vendor employees.

With respect to commenters' concerns about unnecessary inconsistencies in random testing rates between Federal agencies, the Commission continues to believe that the random test rate for employees in the nuclear power industry need not be similar to the rates applied to employees in all, or even most, other Federal agencies or Federally mandated programs. Not all Federal agencies have identical safety concerns or responsibilities.

5. Comment. There should be no difference in the random testing rate for certain positions critical to the safe operation of a nuclear power plant.

Seventeen commenters responded to the Commission's question as to whether certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators, should be excluded from any reduction of the random testing rate. All these commenters recommended against such differentiation. Two licensees stated that treating people in

positions critical to safety differently from other employees could have a negative effect on the morale, self-image, and motivation of this group of highly trained and dedicated specialists. Another stated that all plant employees are critical to safe operation. Therefore, a reduction in the random testing rate should apply to all employees. The potential for added record-keeping requirements creating unnecessary burdens for the industry was another reason for not making this distinction. In the opinion of one commenter, the 1990-1992 industry-wide program performance data do not support testing people in positions critical to safety at a different rate than that applied to other licensee employees. Finally, one licensee cited potential problems getting union agreement to testing this classification of employees at a higher rate than other licensee personnel subject to the FFD rule.

NRC Response

The essence and unanimity of these comments -- that licensed operators and other employees in positions critical to the safe operation of a nuclear power plant should not be excluded from a reduction of the random testing rate -- is not surprising. These particular members of the nuclear power industry's workforce have collectively demonstrated their dedication to safe and efficient plant operations. As at least one commenter noted, the industry's program performance data for the first three years of operation do not support differentiating between people in safety-critical positions and other licensee employees insofar as the random testing rate is concerned. The 1992 program performance data, for example, show that eighteen of the industry's approximately 5,000 licensed operators tested positive for drugs or

alcohol or otherwise violated the licensee's FFD policy; twelve of these were a result of random testing. When comparing these results to the 461 positive results out of 156,730 random tests administered to the industry workforce, the difference in proportion between the licensed operators and the industry workforce is within statistical fluctuations and the difference in the positive rates ^{is} ~~are~~ ^{significant} not statistically different. While the NRC expects licensees to continue to take action to drive this number of positives down even further, this record does not merit testing people in these positions at a rate different from that applied to other licensee employees. The Commission, therefore, concurs with the commenters' recommendation that certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators, should not be excluded from a reduction of the random testing rate.

6. Comment. Random testing is expensive and produces false positives. Furthermore, chronic users are able to avoid detection.

Two commenters, a power plant worker and a union, argued against the usefulness of continued random testing. One of these commenters stated that random testing produces false positives. These cost the industry large amounts of money in settlements and damage the public's perception of licensees' fairness. As additional support for this position, this commenter warned that chronic drug abusers are particularly adept at escaping detection from random testing by subverting the testing process. The other commenter recommended that random testing be eliminated because it is not effective in identifying workers who are impaired at the time urine samples are collected.



OFFICE OF THE
SECRETARY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20586

February 18, 1993

Action: Murley, MRR
Cys: Taylor
Sniezek
Thompson
Blaha
Knubel
Bush, MRR
Meyer, ADM
Shelton, IRM

MEMORANDUM FOR: James M. Taylor
 Executive Director for Operations
C. B. S.
 Samuel J. Chilk, Secretary

FROM:

SUBJECT: SECY-93-014 - MODIFICATION TO THE RANDOM DRUG TESTING RATE

The Commission (with all Commissioners agreeing) has approved publication of the proposed rule in the Federal Register with a 90-day comment period with the changes indicated in the attachment. (Suspense: 3/10/93)

9200240

Attachment:
As stated

cc: The Chairman
 Commissioner Rogers
 Commissioner Curtiss
 Commissioner Remick
 Commissioner de Planque
 OGC
 OIG
 Office Directors, Regions, ACRS, ACNW (via E-Mail)
 OP, SDBU/CR, ASLBP (via FAX)

SECY NOTE: THIS SRM, SECY-93-014, AND THE VOTE SHEETS OF ALL COMMISSIONERS WILL BE MADE PUBLICLY AVAILABLE 10 WORKING DAYS FROM THE DATE OF THIS SRM

9303240176

The NRC recognizes that not all workers are deterred and that random testing does contribute significantly to the detection of substance abuse by those few who are not deterred. The workforce may be divided into three groups concerning the deterrent effect of random testing.

- The vast majority of workers do not abuse substances because of any of several reasons, usually concerns for health. Random testing does not influence the behavior of this group. There would be no deterrent effect.
- A small percentage of workers are chronic abusers. Random testing would have little, if any, influence on this group. There would be no deterrent effect. Random testing would eventually detect these people.
- An unknown percentage of workers are, or could be tempted to be, occasional users and may be able to abstain if properly encouraged. The deterrence effect of random testing would cause them to refrain from initial use or to modify their behavior if they are occasional users. Random testing would have the greatest influence on this group.

The random testing rate has been an issue with other Federally regulated or administered random testing programs. The issue is the balancing of program goals. The optimal random drug testing program is one that maximizes both detection and deterrence of substance abuse while minimizing monetary and social costs (e.g., ^{adverse impacts on} employee morale). To maximize detection, other factors remaining constant, it is assumed that more testing will result in more

located within a single geographic region, with one prevailing set of local drug-use patterns; and

- (iv) The recently reported rate of substance abuse detected through random testing in the railroad industry is ^{quadruple} ~~triple~~ that in the nuclear power industry (approximately 1 percent as against 0.25 percent for power reactor licensee employees for the first 2 years).

Taking into account the uncertainties involved and the low rate of positive tests, the NRC has concluded that lowering the random testing rate from 100 percent to 50 percent would cause little, if any, decrease in the deterrent effect of random testing when applied to licensee employees, and that the rate of positive random tests for licensee employees is not likely to increase. However, experiences with random testing gained since publication of the rule have shown contractor and vendor employees testing positive at a rate approximately double that for licensee employees. Because of the higher rate of positive tests for contractor and vendor employees, the NRC is not proposing, at this time, to lower the rate for that population. See chart.

[INSERT CHART]

In conclusion, the NRC believes that the fitness-for-duty program can be revised to permit licensees to lower the random testing rate for licensee employees without significant impact on the overall effectiveness of the program. Therefore, the Commission is proposing that § 26.24(a)(2) be modified to permit licensees to randomly test their employees at an annual rate equal to at least 50 percent. This would not preclude licensees from



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20585

OFFICE OF THE
SECRETARY

Action: Murley, AE38-2
Cys: Taylor
Snizek
Thompson
Blaha
Bush, NRR
PDR *copy*

October 20, 1992

MEMORANDUM FOR: James M. Taylor
Executive Director for Operations
Samuel J. Chilk, Secretary
SECY-92-271 - APPROPRIATE RANDOM DRUG TESTING
RATE FOR THE NUCLEAR POWER INDUSTRY

The Commission (with all Commissioners agreeing) has approved the staff recommendation to pursue Option 5. The staff should prepare a change to 10 CFR Part 26 for Commission review and approval to permit licensees to randomly test their employees at a rate equal to 50 percent, and maintain the 100 percent random testing rate for contractors and vendors.

45204- (NRR)

(SECY Suspense: 12/4/92)

Although not objecting to Option 5, as described above, Commissioner de Planque would have preferred to await the results of the staff's ongoing reexamination of the justification for imposing random drug testing on all licensee employees with unescorted access to the protected area so as to include in this rulemaking any amendments to Part 26 the staff might recommend as a result of that reexamination. She would also have preferred that the staff consider whether there are certain positions critical to the safe operation of a nuclear power plant which should be excluded from any reduction of the random testing rate as has been suggested.

cc: The Chairman
Commissioner Rogers
Commissioner Curtiss
Commissioner Remick
Commissioner de Planque
OGC
OCAA
OIG

SECY NOTE: THIS SRM, SECY-92-271, AND THE VOTE SHEETS OF ALL COMMISSIONERS WILL BE MADE PUBLICLY AVAILABLE 10 WORKING DAYS FROM THE DATE OF THIS SRM

9211050223



RULEMAKING ISSUE

(Affirmation)

November 4, 1993

SECY-93-302

FOR: The Commissioners

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: MODIFICATIONS TO FITNESS-FOR-DUTY PROGRAM REQUIREMENTS
CONCERNING THE RANDOM DRUG TESTING RATE

PURPOSE:

To obtain Commission approval to publish a final rule that will reduce the annual rate of random drug testing of licensee employees.

BACKGROUND:

By staff requirements memorandum, February 18, 1993, the Commission approved publication of proposed rulemaking to modify the random drug testing rate as recommended in SECY-93-014. The proposed rule was published in the Federal Register on March 24, 1993 (58 FR 15810).

DISCUSSION:

Interested parties were invited to submit comments on the proposed rule by June 22, 1993. The staff received a total of 40 comment letters in response to the notice of proposed rulemaking.

Comments were received from 28 licensees, six labor unions, one vendor, the Nuclear Management and Resources Council, three from licensed reactor operators, and one from a private citizen. There was overwhelming support for the proposed reduction in the annual rate of random testing for licensee

Contact:
Loren Bush, NRR
504-2944

NOTE: TO BE MADE PUBLICLY AVAILABLE
WHEN THE FINAL SRM IS MADE
AVAILABLE

9311120238

employees; most of the commenters believed that the reduced rate should also apply to contractors and vendors, and several commenters proposed a flexible performance-based rate. There was no support for excluding from any reduction in the random testing rate certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators. The staff reviewed all written comments received and considered them in the preparation of the amendment to the final fitness-for-duty (FFD) rule. The draft notice for the Federal Register (Enclosure 1) contains an analysis of all written comments and the staff's responses to them.

None of the commenters provided new information or approaches not previously considered by the staff. The recommendation by NUMARC and eleven licensees that the random testing rate should be flexible and based on performance was one example with significant policy implications. A variation of the flexible, performance-based rate was initially considered by the staff during development of the FFD rule in 1989 (Comment/Response 7.4.2 of NUREG-1354, "Fitness for Duty in the Nuclear Power Industry: Responses to Public Comments"). It also was considered by the staff during development of the current proposed amendment but not offered as an option in SECY-92-271 because the staff believes such an approach would discourage the initiatives that the Commission is encouraging in 10 CFR 26.24(b) and in Section 2.1 of Appendix A to Part 26. For example, using lower cutoff levels, testing for additional drugs, and special testing of suspect specimens would all increase the positive rate.

With regard to comments about applying the reduced random testing rate to contractors and vendors, the staff believes that the pros and cons of the issue were adequately addressed in SECY-92-271 and the low absolute numbers claimed by commenters also were recognized and considered (at 58 FR 15812). However, the staff is recommending that the permission to lower the random testing rate be applied to all of the work force because the number of positive test results are low. "Problem workers" are being screened out and the potential threat to public health and safety posed by contractors and vendors is generally less than that posed by licensee employees.

The staff, therefore, believes that the only modification to the proposed amendment before publishing it as a final rule would be to permit licensees to reduce the random testing rate to 50 percent per year for all persons within the scope of 10 CFR Part 26.

COORDINATION:

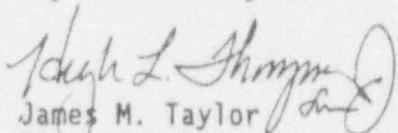
The Office of the General Counsel has no legal objections to publishing the rule.

RECOMMENDATIONS:

That the Commission:

1. Approve publication of the final amendment to 10 CFR Part 26 as set forth in the enclosed notice for the Federal Register.
2. If a rule change is approved, certify, to satisfy the requirements of the Regulatory Flexibility Act, 5 U.S.C. 605(b), that this rule would not have a significant economic effect on a substantial number of small entities. This certification is included in the enclosed notice for the Federal Register.
3. NOTE: If the rule change is approved:
 - a. The notice of final rulemaking, Enclosure 1, will be published in the Federal Register to become effective 30 days after its publication.
 - b. In accordance with 10 CFR Part 51, the staff has prepared an environmental assessment and a finding of no significant impact that are included in the notice. The final rule is insignificant from the standpoint of environmental impact.
 - c. The final rule contains new information collection requirements that are subject to Office of Management and Budget (OMB) approval. These provisions of the rule were approved by OMB on June 2, 1993.
 - d. The staff will inform the Subcommittee on Nuclear Regulation of the Senate Committee on Environment and Public Works, the Subcommittee on Energy and Power of the House Committee on Energy and Commerce, and the Subcommittee on Energy and the Environment of the House Interior and Insular Affairs Committee (Enclosure 3).
 - e. The staff will send copies of the final rule to all affected licensees and other interested persons following the Commission's approval for publication of the final rule.

- f. The Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification and the reasons for it as required by the Regulatory Flexibility Act.



James M. Taylor
Executive Director
for Operations

Enclosures:

1. Notice of Final Rulemaking
2. Regulatory Analysis
3. Draft Public Announcement
4. Draft Congressional Letter

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Monday, November 22, 1993.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Monday, November 15, 1993, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

This paper is tentatively scheduled for affirmation at an Open Meeting during the Week of November 22, 1993. Please refer to the appropriate Weekly Commission Schedule, when published, for a specific date and time.

DISTRIBUTION:

Commissioners

OGC

OCAA

OIG

OPA

OCA

OPP

REGIONAL OFFICES

EDO

SECY

[7590-01]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 26

RIN 3150-AE38

Modifications to Fitness-For-Duty

Program Requirements

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is amending its regulations governing fitness-for-duty (FFD) programs that are applicable to licensees who are authorized to construct or operate nuclear power reactors and to licensees authorized to possess, use, or transport formula quantities of strategic special nuclear material (SSNM). The amendment permits licensees to reduce the random testing rate for all persons covered by 10 CFR Part 26 to an annual rate equal to 50 percent.

EFFECTIVE DATE: January 1, 1994

FOR FURTHER INFORMATION CONTACT: Loren L. Bush, Jr., Safeguards Branch, Division of Radiation Safety and Safeguards, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone: (301) 504-2944.

Summary of Public Comments

The comment period expired on June 22, 1993. Forty comment letters were received. Twenty-eight were from power reactor licensees, six from unions, one from an industry association, one from a vendor, three from licensed reactor operators, and one from a private citizen. There was overwhelming support for the proposed reduction in the annual rate of random testing for licensee employees. Most of the commenters believed that the reduced rate also should apply to contractors and vendors, and several commenters proposed a flexible, performance-based rate. There was no support for excluding from any reduction in the random testing rate certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators. A summary of the comments received and the NRC's responses are presented below.

1. Comment. The random testing rate for licensee employees should be reduced to 50 percent.

All of the 23 commenters submitting comments on the Commission's proposed reduction of the random testing rate to 50 percent for licensee employees supported the proposal. The reason most often expressed was the low rate of positive random test results experienced by licensee employees, particularly in comparison with other industries having significant safety concerns. These commenters believe that this low industry-wide positive rate justifies the lowering of the random testing rate to 50 percent. Some commenters stated that a 50-percent rate for licensee employees would make

also supported the proposed change because it would lessen the disruption of workers lives and reduce the invasion of privacy that random drug testing creates.

NRC Response

The NRC concurs with those commenters who stated that a 50 percent random testing rate as applied to licensee employees can be expected to provide sufficient deterrence to justify lowering the rate at this time. It also agrees with the observation that the access authorization program and other FFD program elements, such as policy communications and awareness training, behavioral observation, for-cause testing, employee assistance programs, and the imposition of strict sanctions for violations of an FFD policy will continue to deter drug and alcohol abuse by most of the workforce. As some commenters noted, requiring fewer tests of licensee employees should decrease the privacy invasion experienced by some employees. It also should result in cost savings across the industry by reducing lost work hours and the number of tests to be administered.

The Commission recognizes that positive results in the nuclear power industry's random testing are generally among the lowest of any U.S. industry. Nonetheless, it realizes that there are many variables that can affect the rate of positive testing results and that relatively low positive test results, by themselves, are not the only indicator of the effectiveness of a testing program either on an industry-wide or a licensee program level. Some of the variables that could affect the testing results are the propensity of the population being tested to use drugs and alcohol, the effectiveness of

Four commenters recommended that the random testing rate be reduced to less than 50 percent. The rates they recommended varied from 5 percent to 25 percent. Their central argument was that the random testing rate can be lowered substantially without threatening the effectiveness of the program. The very low rates of drug and alcohol positive tests that have been recorded by the nuclear industry during the first two years of FFD program operations are the basis for their recommendation. One licensee stated that most chronic drug users probably have been eliminated and currently there is not a serious drug or alcohol abuse problem in the industry. This commenter and NUMARC also cited the GAO study that found that the percentage of positives does not vary significantly among Federal agency drug testing programs, regardless of what random rate is used. Another licensee emphasized that behavioral observation, not random testing, is the most potent tool in detecting drug abuse. Another commenter recommended that the NRC consider further reductions because the effectiveness of other program elements makes a random rate of even 50 percent unnecessarily high.

Significant cost savings was given as the most compelling reason to reduce the random rate below 50 percent. One licensee estimated the industry would save up to \$30 million annually without degradation of the overall program.

NRC Response

As stated in the response to Comment 1 above, positive random testing results are not, by themselves, the only indicator of the FFD program's effectiveness in detecting substance abuse. The NRC does not have sufficient

started have been detected or have left, there can be expected to be a continuing level of intermittent illegal drug use and alcohol abuse among industry employees; such use is difficult to detect. The Commission concludes that the low positive random test results do not indicate that there has ceased to be a drug and alcohol abuse problem and that further reduction in the random testing rate would not be appropriate at this time.

In response to the commenters' reference to the GAO's observation that the percentage of positives does not vary significantly among Federal agency drug testing programs, the NRC notes that the GAO's objective in that report was to identify potential cost savings in Federal employee drug testing programs. Its objective did not include determination of the relative deterrent values of alternative random testing rates. In accomplishing its objective, the GAO properly concentrated on only the costs associated with Federal employee drug testing. It did not perform an indepth analysis of the several variables that influence testing results nor of the very complex relationship between those variables and the deterrence value of testing. Such variables would include the inclination for drug or alcohol abuse among the employees in the various industries in which the Federal testing programs operate, the extent to which the strength and effectiveness of other, non-testing program elements, such as drug awareness training, may affect testing results, and the relative stringency of sanctions imposed by the various Federal agencies following positive test results. Because the GAO's objective was to address the cost rather than the deterrence effectiveness of testing, the NRC does not consider the commenter's reference to the GAO's observation to be a persuasive argument for reduced random testing rates.

recommendation was endorsed by five licensees. Under NUMARC's proposed approach, the industry would be allowed by regulation to adjust its random testing rate based on testing results from the previous reporting period. All licensees would be required to test at a 100-percent random rate if the industry-wide positive rate were greater than 1.0 percent in the previous period, at a 50-percent random rate if the positive rate was between 0.50 percent and 1.0 percent, at a 25-percent random rate if the positive rate was between 0.25 percent and 0.50 percent, and at a 10-percent random rate if the positive rate was less than 0.25 percent. Two of the eleven licensees favoring a performance-based testing system provided a general recommendation that did not specify whether the random testing rate should be based on the positive testing results of each individual licensee, or on the results of the industry as a whole.

The commenters noted various potential advantages of adopting a performance-based approach to setting the random testing rate. One stated that adopting such an approach would be consistent with the NRC's initiative to identify performance-based programs that would be beneficial to the industry. Another listed cost savings, equity in that each licensee's random rate would be commensurate with its program performance, and an incentive for licensees to maximize program conformance with the FFD rule as advantages of such an approach.

NRC Response

During development of 10 CFR Part 26 in 1989, the Commission considered a variation of the flexible, performance-based random rate similar to the

testing rates as positive testing results declined would likely discourage licensees from adopting lower screening cutoff levels and taking measures to detect attempts by users to avoid detection.

Lastly, a performance-based approach would require the collection and analysis of performance data to provide the bases for adjustments to the random testing rate. Such data is not currently collected by the licensees or the NRC. Previous efforts known to the NRC staff to identify and analyze the many candidate performance indicators for measuring the effectiveness of random testing have been inconclusive, primarily because of the numerous variables. Furthermore, assuming that the proper performance indicators can be developed, it would appear that the collection and analysis of data to support a performance-based approach would add a considerable administrative burden to both licensees and the NRC.

For all these reasons, the Commission declines to adopt a performance-based approach to setting the random testing rate.

4. Comment. The reduction in the random testing rate should be applied to all workers.

Four of the 30 commenters on this issue - three unions and one licensee - supported the Commission's proposal that licensees maintain the 100-percent random testing rate for contractor and vendor employees. Their reasons included a concern for lack of commitment by contractor employees to maintaining the industry's high drug-free standard and the need for the higher testing rate to provide continued deterrence for contractor employees. One of the three unions recommended that long-term contractors should have the same

measure. Two licensees also cited a study of the detection effectiveness of nine random testing rates published in NUREG/CR-5784, "Fitness for Duty in the Nuclear Power Industry: A Review of the First Year of Program Performance and an Update of the Technical Issues," which indicates that a 100-percent testing rate is only a little more effective than a 50-percent rate for detecting occasional drug users.

NRC Response

Although there is a difference between the positive results of random testing of licensee employees and those of contractor and vendor employees, there is a general downward trend of the results of random testing, as stated in the response to Comment 1 above. Therefore, the NRC agrees with those commenters who contend that the testing results during the past three years do not justify making a distinction between these groups insofar as the random testing rate is concerned. Although the contractor/vendor random testing positive rates continue to be about twice the rate for licensee employees, the Commission agrees that the actual numbers of positive test results of all categories of nuclear power workers are low, other program measures such as more stringent sanctions tend to screen out problem workers, and the potential threat to public health and safety posed by most contractors and vendors is generally less than that posed by licensee employees because they are usually working on site only when the reactor is shut down.

In this same vein, the Commission recognizes that the percentages of contractor and vendor positive random testing results are low compared to the percentages of positives in other industries. For example, the

with the random rates required by other Federal agencies in relation to their public health and safety responsibilities.

5. Comment. There should be no difference in the random testing rate for certain positions critical to the safe operation of a nuclear power plant.

Seventeen commenters responded to the Commission's question as to whether certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators, should be excluded from any reduction of the random testing rate. All these commenters recommended against such differentiation. Two licensees stated that treating people in positions critical to safety differently from other employees could have a negative effect on the morale, self-image, and motivation of this group of highly trained and dedicated specialists. Another stated that all plant employees are critical to safe operation. Therefore, a reduction in the random testing rate should apply to all employees. The potential for added record-keeping requirements creating unnecessary burdens for the industry was another reason for not making this distinction. In the opinion of one commenter, the 1990-1992 industry-wide program performance data do not support testing people in positions critical to safety at a different rate than that applied to other licensee employees. Finally, one licensee cited potential problems getting union agreement to testing this classification of employees at a higher rate than other licensee personnel subject to the FFD rule.

random testing produces false positives. These cost the industry large amounts of money in settlements and damage the public's perception of licensees' fairness. As additional support for this position, this commenter warned that chronic drug abusers are particularly adept at escaping detection from random testing by subverting the testing process. The other commenter recommended that random testing be eliminated because it is not effective in identifying workers who are impaired at the time urine samples are collected. For-cause testing, in this commenter's opinion, is more effective because it more accurately reflects a worker's present ability to perform his/her job at the time he/she is tested. This commenter also stated that random testing appears to be a means of having the NRC enforce the Controlled Substances Act which is not the NRC's responsibility.

NRC Response

The Commission has long been well aware of the types of FFD program-related concerns as addressed by these commenters. During the promulgation of 10 CFR Part 26 in 1989, the Commission fully addressed these and many other such concerns. (See NUREG-1354, "Fitness for Duty in the Nuclear Power Industry: Responses to Public Comments.") At that time the NRC concluded, for example, that licensee FFD programs should be concerned not only with impairment, but also with worker reliability and trustworthiness. The NRC believes that any illegal drug use or alcohol abuse by a worker reflects upon his or her trustworthiness and reliability. Likewise, random testing is not intended, nor has it ever functioned, as a means to enforce the Controlled Substances Act. Section 26.29(b) provides that licensees, contractors, and

additional administrative and financial burdens would cancel out any savings resulting from reducing the licensee employee rate to 50 percent. NUMARC stated that the industry would save approximately \$4.1 million if the number of tests of contractor and vendor employees was cut in half.

NRC Response

Some of the comments noted above asserted that separate random testing rates for licensee employees and contractors/vendors would create additional administrative and financial burdens for licensees. Although this issue is somewhat moot since the Commission will permit licensees to reduce the random testing rate to 50 percent per year for all persons covered by Part 26, the Commission does not concur that conducting random testing using two random rates would have caused appreciably higher administrative or operating costs. Presumably, most licensees' data bases already distinguish between licensee employees and contractor/vendor employees subject to testing. Numerous commenters on the initial rule in 1989 indicated that the workforce population should be separated so that permanent employees would not be tested at a much higher rate to make up for contractors who might not be on site when selected for testing (see comment/response 7.4.3 of NUREG-1354). The NRC staff understands that several licensees have divided their testing population as permitted by the rule. The number and identity of licensee employees in the testing pool remains rather constant over time. The number and identity of contractor/vendor employees in the testing pool, on the other hand, varies quite considerably over time depending on outages and other operational considerations. A licensee may choose to create more than one test population

Paperwork Reduction Act Statement

This final rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). These requirements and amendments were approved by the Office of Management and Budget, approval number 3150-0146.

Since the rule will permit licensees to reduce the random testing rate for their employees, the resulting reduction in the reporting and recordkeeping burden is expected to be an average of 223 hours per site, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch (MNBB-7714), U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-3019 (3150-0146), Office of Management and Budget, Washington, DC 20503.

Regulatory Analysis

The NRC has prepared a regulatory analysis for this regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The analysis is available for inspection in the NRC Public Document Room, 2120 L Street NW (Lower Level), Washington, DC. Single copies

List of Subjects in 10 CFR Part 26

Alcohol abuse, alcohol testing, appeals, chemical testing, drug abuse, drug testing, employee assistance programs, fitness for duty, hazardous materials transportation, management actions, nuclear materials, nuclear power plants and reactors, penalties, protection of information, radiation protection, reporting and recordkeeping requirements, sanctions, special nuclear materials.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is adopting the following amendment to 10 CFR Part 26.

Part 26--Fitness for Duty Programs

1. The authority citation for Part 26 continues to read as follows:

Authority: Secs. 53, 81, 103, 104, 107, 161, 68 Stat. 930, 935, 936, 937, 939, 948, as amended (42 U.S.C. 2073, 2111, 2112, 2133, 2134, 2137, 2201); secs. 201, 202, 206, 88 Stat. 1242, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846).

2. In § 26.24 paragraph (a)(2) is revised to read as follows:

§ 26.24 Chemical testing

(a) * * * *

REGULATORY ANALYSIS OF REVISION
TO RANDOM TESTING RATE:
PART 26 - FITNESS FOR DUTY PROGRAMS

SUMMARY

The Nuclear Regulatory Commission (NRC) is modifying its current Fitness-for-Duty Program requirements. The amendments to 10 CFR Part 26 will apply to all licensees authorized to construct or operate a nuclear power reactor, to possess or use formula quantities of strategic special nuclear material (SSNM) (referred to hereafter as fuel facilities), or to transport formula quantities of SSNM. The amendments will reduce the random testing rate for all licensee employees and contractor and vendor employees subject to random testing to an annual testing rate of 50 percent. These changes are based on a review of licensee program performance data, a literature review of detection and deterrence provided by random testing, and initiatives proposed by the Nuclear Management and Resources Council (NUMARC). This document contains a regulatory analysis of the rulemaking. The document was prepared according to the guidance set forth in Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission, NUREG/BR-0058, Revision 1, May 1984.

The change in the random testing rate could reduce the number of employees identified as using alcohol or drugs in violation of licensees' fitness-for-duty policies. The potentially small increase in unidentified users continuing to work should not significantly affect the overall risk to the general public from plant operations.

Staff estimates that the rule change will result in annual savings of approximately \$66,000 per reactor or nuclear fuel facility conducting offsite testing, and about \$69,000 per reactor conducting onsite testing, or a total of \$7.9 million annual savings for the two industries. The present value of the rule change assumes an annual discount rate of five percent and an estimated operating life of twenty-five years. The present value of the rule change is approximately \$977,000 per reactor or nuclear fuel facility conducting offsite testing and \$1,021,000 per reactor conducting onsite testing. These 25-year savings for the two industries have a present value of approximately \$116.9 million.

1.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) is modifying its current Fitness-for-Duty (FFD) Program requirements. The amendments to 10 CFR Part 26 will apply to all licensees authorized to construct or operate a nuclear power reactor, to possess or use formula quantities of strategic special nuclear material (SSNM)(referred to hereafter as fuel facilities), or to transport formula quantities of SSNM. The amendments will reduce the random testing rate for all licensee employees and contractor and vendor employees subject to random testing to an annual testing rate of 50 percent. These changes are based on a review of licensee program performance data, a review of random testing rates in other industries, a review of detection and deterrence provided by random testing, and initiatives proposed by the Nuclear Management and Resources Council (NUMARC). This document contains a regulatory analysis of the rulemaking. The document was prepared according to the guidance set forth in Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission, NUREG/BR-0058, Revision 1, May 1984.

1.1 BACKGROUND

The NRC issued FFD regulations on June 7, 1989 (54 FR 24468) applicable to licensees authorized to operate a nuclear power reactor and holding a permit to construct or operate a nuclear power plant. Licensee programs implementing the regulations were required to be in place by January 3, 1990. The regulations require affected licensees to implement fitness-for-duty programs to reasonably assure that nuclear power personnel are not under the influence of any substance which can adversely affect the performance of their duties. The FFD regulations establish chemical testing requirements and testing standards for the abuse or misuse of alcohol and drugs. Four types of testing are currently required: (1) pre-access testing; (2) random testing at an annual testing rate equal to 100 percent of the tested population; (3) for-cause testing; and (4) follow-up testing.

The NRC has recently amended 10 CFR Part 26 to require licensees that are authorized to possess, use, or transport formula quantities of strategic special nuclear material (SSNM) to institute fitness-for-duty programs similar to those in the nuclear power industry (58 FR 31467, June 3, 1993). This amendment, which becomes effective on November 30, 1993, requires only licensees that are authorized to possess, use, or transport unirradiated Category I Material to adopt such programs.

During the original FFD rulemaking process in 1988, the Commission invited public comment on the rates of random testing that would provide an acceptable probability of detection and adequate deterrence (53 FR 36795 at 36796; September 22, 1988). Public comments strongly opposed a proposed 300 percent rate. NUMARC and most licensees proposed a 100 percent rate and recommended that this rate be reevaluated on the basis of utility experience and then be reduced to 25 percent, if such a change was warranted. As a result, the Commission selected an annual random testing rate equal to 100 percent of the workforce subject to testing. The Commission also indicated that it would consider reducing this rate in the future if it appeared that industry experience with the existing rate had been positive (54 FR 24468 at 24474; June 7, 1989).

1.3 OBJECTIVES OF THE RULEMAKING

The Commission is modifying 10 CFR 26.24(a)(2) to permit random testing of employees subject to the rule at an annual rate equal to 50 percent of the workforce subject to testing. The Commission believes that lowering the random testing rate to 50 percent will achieve the regulatory objective of establishing a rate that provides adequate detection and deterrence while being cost-effective.

positive rate went above an established standard. Conversely, a licensee would be permitted to lower its random testing rate if its positive rate was below an established standard.

During development of 10 CFR Part 26 in 1989, the Commission considered a variation of a flexible, performance-based random rate similar to this approach. (See, for example, the NRC's response to Comment 7.4.2 in NUREG-1354, "Fitness for Duty in the Nuclear Power Industry: Responses to Public Comments.") At that time, the Commission rejected a performance-based rate for various reasons. Positive random test results are not the only indicator of detection and deterrence effectiveness or of overall random testing program performance. Relatively low positive test rates do not necessarily indicate that there is not a drug and alcohol abuse problem. Some users have become adept at avoiding detection, and the use of increasingly effective subversion techniques may be one reason why random testing results are decreasing. It is possible, for example, that particular licensees can experience low or declining positive random testing rates due to FFD program deficiencies. Adopting an approach that allowed such licensees to reduce their random testing rates as their positive results declined would, in effect, reward deficient program performance. It would also tend to penalize licensees that maintain aggressive programs that continue to show relatively high positive random testing results. Adopting a performance-based approach would also tend to discourage the initiatives that the Commission is encouraging in 10 CFR 26.24(b) and in Section 2.1 of Appendix A to Part 26. For example, to use lower cutoff levels, to test for additional drugs, and to use special testing of suspect specimens would all increase the positive rate. Furthermore, the collection and analysis of performance data to support a performance-based approach, assuming that the proper performance indicators can be developed, would add a considerable administrative burden to both licensees and the NRC. For these reasons, the Commission has decided against adopting a performance-based random testing rate.

2.4 AWAIT RULEMAKING PENDING FURTHER STUDY

The Commission also considered conducting a study in which the random testing rate of some licensees would be reduced to 50 percent. The test result data from these experimental sites would be compared with the results of licensees that would continue a 100 percent testing rate. The experiment would have to run for at least two years to allow for delayed effects caused by adjusted testing rates and to obtain a sufficient number of test results. The design of the study and the analysis of the results would require an additional year. The Commission also considered conducting an attitudinal study which would attempt to show worker attitudes toward, and their understanding of, random testing. The Commission also considered awaiting and evaluating the results of the Federal Railroad Administration's test program (56 FR 22905; May 17, 1991) which is now expected to be completed in late 1993. The Commission decided to proceed with this rulemaking because the research would have taken several years and would have provided no guarantee of shedding any further light on the subject of deterrence that would be useful in the Commission's current attempts to identify an optimal random testing rate.

3.2 ESTIMATION OF BENEFITS AND COST SAVINGS

This amendment will result in significant cost savings to licensees due to reduced costs associated with random testing and with time lost from work. Based on information reported by nuclear power plant licensees to the NRC and contained in NUREG/CR-5758, Volumes 1, 2, and 3, a total of 459,291 industry employees were tested randomly in 1990 through 1992, an average of 153,097 people per year. In addition, there are a total of 1,800 employees at two nuclear fuel facilities who will be covered by the rule.¹ Under a 100 percent testing rate, each reactor/nuclear fuel facility would be expected to randomly test 1,313 people ((153,097 tests plus 1,800 tests) divided by (116 reactors plus 2 nuclear fuel facilities)). Under the revised rule, reducing the random testing rate to 50 percent will result in an average of 657 fewer random tests annually per reactor/nuclear fuel facility (1,313 tests per reactor/nuclear fuel facility divided by 2).²

The total costs of testing are comprised of three cost categories: the costs of chemical testing of employee specimens, the employee's time away from work (productivity costs), and the costs of obtaining and testing blind performance tests. The estimated cost of testing is based on the following assumptions:

- Based on information available to the NRC staff, 27 sites containing 42 reactor units currently conduct onsite testing, while the remaining 48 sites containing 74 reactor units send all specimens for offsite analysis. It is assumed that the two fuel facilities will also send all specimens for offsite analysis.
- All specimens collected from licensee employees at 48 sites (74 reactor units) and two nuclear fuel facilities would be sent offsite to a NIDA laboratory for testing. The average cost of chemical testing by a NIDA laboratory is estimated to be \$49 per test in 1993 dollars. This cost includes specimen collection labor; shipping to an offsite laboratory, initial screening and, if necessary, confirmatory testing; and reporting of results to the licensee. NUMARC estimated the cost of testing in 1990 to range between \$15 and \$100 for off-site testing. However, this estimate did not include the cost of specimen collection, which was estimated to range between \$10 and \$115 per specimen.^{3,4,5}

¹It is assumed that all SSNM transporters are subject to either the U.S. Department of Transportation or U.S. Department of Energy drug and alcohol fitness programs. This amendment will, therefore, have no effect on the rate of random testing of those employees.

²This analysis does not take into account cost savings that would be produced by contractor and vendor companies reducing the random testing rate used in their internal testing programs from 100 percent to 50 percent. An undetermined number of tests have been administered annually by those programs but have not been reported in NUREG/CR-5758, Volumes 1, 2, and 3. Reducing the number of those unreported tests by half would produce modest additional cost savings for the industry that are not included in this analysis.

³Letter to Brian K. Grimes, NRC, from Thomas E. Tipton, NUMARC, September 20, 1991.

presumptive positives to a laboratory for analysis is \$49. This includes shipping, laboratory assessment, and reporting results to the licensee.

- The rule requires licensees with onsite testing programs to send 10 percent of the negative specimens collected to an offsite laboratory for analysis as part of their onsite laboratory quality assurance program ([657 tests - 21 tests] x 10% = 64 tests). The estimated cost for sending onsite facility quality assurance specimens to a laboratory for analysis is \$49. This includes shipping, laboratory assessment, and reporting results to the licensee.

Licensees will also realize cost savings in reduced labor costs by reducing the time spent testing employees. Assumptions for labor savings are as follows:

- It takes employees 1 hour to travel to the collection site, be tested, and return to work.
- Since the types of job classification affected by the rulemaking would vary widely, a standard wage rate of \$48.66 per hour including a fringe benefit multiplier of 2.0 is assumed. This average wage rate was derived from information presented in NUREG/CR-4627, Abstract 6.3, Table 4.1. The average 1988 base wage rate was \$16.56 per hour. With a multiplier of 2.0 for fringe benefits, the wage rate was \$33.12 per hour. Inflating to 1993 costs using an 8 percent average annual personnel wage rate increase, the estimated average 1993 utility employee wage rate is \$48.66 per hour. For purposes of this analysis, it is assumed that the wage rates at nuclear power plants and the two fuel facilities are similar.

Licensees' costs of submitting blind performance test specimens to HHS-certified laboratories, as required by section 2.8(e)(2) of Appendix A to the rule, will also be decreased by this rule revision. (The rule currently requires licensees to submit a number of blind performance specimens equal to 10 percent of the total number of specimens collected; a change being proposed to the Commission would lower this to 5 percent, which is the rate used for this analysis.) Blind performance costs are treated separately from other testing costs for purposes of analysis. Blind performance tests can cost \$30 to \$35 for manufactured specimens, including a master list of what the specimens contain. Other costs associated with blind proficiency testing include the cost of MRO review, decoding the master sheet against the test results reported by the laboratory, and contacting the laboratory when blind proficiency questions arise or errors are found. Alternatively, licensees may prefer to prepare their own spiked samples for off-site screening. The total estimated cost for a blind performance testing specimen prepared by the licensee is estimated to be about \$3, plus the cost of testing, MRO review, and disposition. Overall, the costs per blind performance specimens may be expected to range from \$50 to \$80 per specimen when these factors are

million annual savings for the two industries. The present value of the rule change assumes an annual discount rate of five percent and an estimated operating life of twenty-five years. The present value of the rule change is approximately \$977,000 per reactor and nuclear fuel facility conducting offsite testing and \$1,021,000 per reactor conducting onsite testing. These savings for the two industries have a present value of approximately \$116.9 million.

3.3 IMPACT ON OTHER REQUIREMENTS

This rule change is not expected to have an impact on other rule requirements.

ENCLOSURE 3
DRAFT PUBLIC ANNOUNCEMENT

NRC AMENDS FITNESS-FOR-DUTY RULE

The Nuclear Regulatory Commission is amending its Fitness-for-Duty rule which requires licensees to randomly test their employees for substance abuse.

The present requirement calls for random testing at an annual rate of 100 percent of a licensee's work force. As amended, licensees would be permitted to reduce the annual rate to 50 percent for all workers.

The action is based on the Commission's review of the experiences gained from its Fitness-for-Duty rule since it first became effective in 1989, including the fact that the rate of substance abuse detected as a result of the NRC-mandated program has been low--about 0.33 percent for the power reactor work force over the past three years.

ENCLOSURE 4
DRAFT CONGRESSIONAL LETTER

DRAFT CONGRESSIONAL LETTER

Dear Mr. Chairman:

The Nuclear Regulatory Commission is amending its Fitness-for-Duty Rule [10 CFR Part 26, which was published in the Federal Register on June 7, 1989 (54 FR 24468)] to permit licensees to reduce the random testing rate for all persons covered by the rule to 50 percent.

Enclosed for your information is a copy of the amendment to the rule as approved by the Commission for publication in the Federal Register.

Sincerely,

Dennis K. Rathbun, Director
Office of Congressional Affairs

ADDRESSEES*:

The Honorable Joseph Lieberman, Chairman
Subcommittee on Clean Air and Nuclear Regulation
Committee on Environment and Public Works
United States Senate
Washington, DC 20510
cc: Senator Alan Simpson

The Honorable Richard Lehman, Chairman
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
United States House of Representatives
Washington, DC 20515
cc: Representative Barbara Vucanovich

The Honorable Philip Sharp, Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515
cc: Representative Michael Bilirakis

The Honorable Tom Bevill, Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations
United States House of Representatives
Washington, DC 20515
cc: Representative John Myers

The Honorable J. Bennett Johnston, Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations
United States Senate
Washington, DC 20510
cc: Senator Mark O. Hatfield



POLICY ISSUE

January 26, 1993

(Notation Vote)

SECY-93-014

For: The Commissioners

From: James M. Taylor
Executive Director for Operations

Subject: MODIFICATION TO THE RANDOM DRUG TESTING RATE

Purpose: To obtain Commission approval to publish a notice of proposed rulemaking.

Background: SECY-92-271 of August 4, 1992, provided the Commission with recommendations concerning modifications to the random drug testing rate for the nuclear power industry. By a staff requirements memorandum (SRM) dated October 20, 1992, the Commission approved the staff's recommended course of action (Option 5) and directed the staff to prepare an appropriate change to 10 CFR Part 26 that would permit licensees to randomly test their employees at a rate equal to 50 percent and maintain the 100 percent random testing rate for contractors and vendors.

Discussion: As instructed in the SRM, the staff has prepared a proposed amendment to the Fitness-For-Duty (FFD) rule for publication in the Federal Register.

The proposed Federal Register notice invites specific comments as to whether positions critical to the safe operation of a nuclear power plant should be excluded from the reduction in the random testing rate.

Resource Estimate: Resources to implement this rulemaking are included in the FY 1992-1996 Five Year Plan, and no additional resources would be required for its implementation.

NOTE: TO BE MADE PUBLICLY AVAILABLE
WHEN THE FINAL SRM IS MADE
AVAILABLE

Contact:
Loren Bush, NRR
504-2944

9301290039

Coordination:

The Office of the General Counsel has reviewed this paper and has no legal objection.

The CRGR has reviewed this paper. All comments have been addressed and the CRGR agrees with the publication of the enclosed notice in the Federal Register. The ACRS decided not to review the proposed modification to the rule.

Recommendations:

That the Commission:

1. Approve publication of the proposed rule in the Federal Register (Enclosure A) with a 90-day public comment period.
2. Certify that the proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities. This certification is included in the enclosed Federal Register notice.
3. Note that:
 - a. In accordance with 10 CFR Part 51, the staff has determined that the proposed rule is the type of action described in categorical exclusion 10 CFR 51.22(c)(2). Therefore, neither an environmental statement nor an environmental assessment has been prepared for the proposed rule.
 - b. A draft Regulatory Analysis will be placed in the NRC Public Document Room (Enclosure B).
 - c. This proposed rule does not amend information collection requirements that are subject to the Paperwork Reduction Act of 1980.
 - d. The appropriate Congressional Committees will be informed of the Commission's action (Enclosure C).
 - e. A public announcement will be issued (Enclosure D).
 - f. The Federal Register notice will be distributed to applicable licensees and other interested parties.

- g. The Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification and the reasons for it, as required by the Regulatory Flexibility Act.

Scheduling:

If scheduled on the Commission agenda, recommend this paper be considered at an open meeting. No specific circumstance is known to staff which would require Commission action by any particular date in the near term.

fr James L. Blake
James M. Taylor
Executive Director
for Operations

Enclosures:

- A. Federal Register Notice of Proposed Rulemaking
- B. Draft Regulatory Analysis
- C. Draft Congressional Letter
- D. Draft Public Announcement

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Wednesday, February 10, 1993.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Wednesday, February 3, 1993, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION:

Commissioners
OGC
OCAA
OIG
OPA
OCA
OPP
EDO
ACRS
ASLBP
SECY

4

Enclosure A

Federal Register Notice of Proposed Rulemaking

NUCLEAR REGULATORY COMMISSION

10 CFR Part 26

RIN 3150-AE36

Modifications to Fitness-For-Duty
Program Requirements

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) proposes to amend its regulations to modify current Fitness-for-Duty Program (FFD) requirements. The proposed amendments would apply to all licensees authorized to construct or operate a nuclear power reactor pursuant to 10 CFR Part 50. The proposed rule is intended to permit licensees to reduce the random testing rate for licensee employees but maintain the 100 percent random testing rate for contractor and vendor employees.

DATE: The comment period expires (insert date 90 days from date of publication in the Federal Register). Comments received after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

ADDRESSES: Mail comments to: The Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, ATTN: Docketing and Service Branch.

Deliver comments to: One White Flint North, 11555 Rockville Pike, Rockville, Maryland between 7:30 am and 4:15 pm on Federal workdays.

Copies of SECY-92-271, the draft regulatory analysis, and the comments received may be examined at: the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC.

Copies of NUREG/CR-5758 (Volumes 1 and 2) and NUREG/CR-5784 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5282 Port Royal Road, Springfield, VA 22161. A copy is available for inspection and/or copying for a fee in the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT: Loren L. Bush, Jr., Reactor Safeguards Branch, Division of Radiation Safety and Safeguards, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone: (301) 504-2944.

SUPPLEMENTARY INFORMATION:

Background

The NRC is proposing to amend its regulations governing "Fitness-for-Duty Programs," as part of its continuing effort to improve its regulations.

The NRC has reviewed experiences gained since publication of the current rule on June 7, 1989 (54 FR 24468) and implementation by power reactor licensees on January 3, 1990. The NRC has determined that it is appropriate to permit a reduction in the random testing rate for utility employees but maintain the 100 percent random testing rate for contractors and vendors.

During the FFD rulemaking process, the NRC had specifically invited the public to comment on the rates of random testing (53 FR 36795 at 36796; September 22, 1988). Public comments strongly opposed a proposed 300 percent rate; the Nuclear Management and Resources Council (NUMARC) and most licensees proposed a 100 percent rate. These commenters also recommended that this rate be reevaluated on the basis of utility experience and be reduced to 25 percent, if warranted (54 FR 24468 at 24472; June 7, 1989). As a result, the Commission indicated that it would consider reducing testing rates after several years if it obtained information that experience in the industry with the existing rate had been positive (54 FR 24468 at 24474; June 7, 1989). On November 7, 1991, the Commission directed the staff to report on work that has been done on the deterrent effect of different testing rates with recommendations of the applicability of the work to the nuclear industry.

SECY-92-271 informed the Commission that no research exists that directly addresses the issue of whether reducing the random testing rate affects the deterrent effect of drug testing and presented options for consideration by the Commission. On October 20, 1992, the Commission instructed the staff to prepare a change to 10 CFR Part 26 that would permit licensees to randomly test their employees at a rate equal to 50 percent.

Discussion

The purpose of random testing was discussed in the Federal Register in the Commission's notice of proposed rulemaking published on September 22, 1988 (53 FR 36795 at 36810). An extract of that discussion follows:

"The purpose of random (unannounced) testing is to provide reasonable assurance that employees are fit for duty by identifying current drug users and by deterring drug users from further use or potential users from initial use. The frequency with which an individual is tested is relevant to both the identification and deterrence goals of the drug testing program. Generally, the more frequent the testing, the greater the deterrent effect and the better the detection capabilities. However, very frequent testing may result in unacceptable economic or social costs. Although there is no research upon which the testing frequency may be based, it seems reasonable to assume that:

- * Any form of unannounced testing would provide some level of deterrence.
- * There would be little deterrent if the testing dates were predictable and the drug user knew he was not immediately susceptible to another test.
- * Testing each day would provide more of a deterrent than testing once each week or month, especially if the daily activity was highly visible.
- * Deterrence is related to either the actual or perceived probability of detection.
- * The actual probability of detection is related to the type of drug, dose, frequency of use, rate of metabolism and excretion from the body, and the frequency of testing.
- * The perceived probability of detection is related to the frequency of testing, the "publicity" given positive findings and sanctions imposed, and the abuser's knowledge of the rate of metabolism and actual probability of detection."

The NRC recognizes that not all workers are deterred and that random testing does contribute significantly to the detection of substance abuse by those few who are not deterred. The workforce may be divided into three groups concerning the deterrent effect of random testing.

- The vast majority of workers do not abuse substances because of any of several reasons, usually concerns for health. Random testing does not influence the behavior of this group. There would be no deterrent effect.
- A small percentage of workers are chronic abusers. Random testing would have little, if any, influence on this group. There would be no deterrent effect. Random testing would eventually detect these people.
- An unknown percentage of workers are, or could be tempted to be, occasional users and may be able to abstain if properly encouraged. The deterrence effect of random testing would cause them to refrain from initial use or to modify their behavior if they are occasional users. Random testing would have the greatest influence on this group.

The random testing rate has been an issue with other Federally regulated or administered random testing programs. The issue is the balancing of program goals. The optimal random drug testing program is one that maximizes both detection and deterrence of substance abuse while minimizing monetary and social costs (e.g., employee morale). To maximize detection, other factors remaining constant, it is assumed that more testing will result in more

detection. In maximizing deterrence, random testing rates have been influenced by assumptions that the probability of being selected for testing would have a deterrent effect and that the higher the testing rate the greater the deterrent effect (although the incremental deterrent effect would likely diminish as test rates increase). These assumptions are based on both intuition and earlier efforts by the Department of Defense that indicated a greater deterrent effect at higher random testing rates. In minimizing monetary and social costs when establishing a minimum random testing rate, factors such as the level of intrusion on an individual's privacy and the incremental costs of additional testing are considered. In attempting to establish optimal testing rates that are reasonable and consistent with each agency's unique needs, Federal agencies have established programs with random testing rates that vary from 4 percent to 200 percent.

Perceptions of risk are believed to play a large role in deterring substance abuse. For example, from studies of drunk driving and deterrence measures, researchers conclude that the risk of incurring strong sanctions appears to have a strong deterrent effect on substance abuse. In addition, research on human decisionmaking and risk assessment suggests that an individual's perceptions of the risk of being tested and the risk of drug use being detected are not based on rational calculations of probabilities alone. Individuals tend to overestimate the likelihood of low probability events (being selected for testing) and tend to incorporate into their decisionmaking the information that is most easily recalled.

Deterrence is believed to be a function of the perceived risk of being detected, the severity of the sanction, and the swiftness with which it is applied compared with the gratification derived from the illicit behavior.

Several conclusions may be drawn from review of the available literature:

(1) The deterrent effect of random drug and alcohol testing programs may not be sensitive to incremental adjustments in random test rates. While random testing remains critical in deterring drug abuse, it is only one of the forces acting to deter drug use. Other important factors include the elements of a broadbrush program (e.g., awareness training, pre-access and for-cause testing, behavioral observation, counseling, and removals) as well as organizational and workforce demographic factors and drug-specific factors.

(2) Assuming equal testing rates and procedures, there will be a greater deterrent effect when the risks of drug abuse--including the probability of detection--are well understood than when they are not.

(3) Some users will remain undeterred. Based on the findings of the military and research on drunk drivers, some part of the population continues to abuse drugs or alcohol even when detection and sanctions are highly certain. Regardless of the random testing rate, some users may not cease their drug use under any condition. Thus, other program elements, such as behavioral observation, for-cause testing, and employee assistance programs, are important to provide additional assurances to detect and remove chronic drug abusers from the workforce. However, a higher random testing rate would more rapidly detect these undeterred users (see Appendix C to NUREG/CR-5784).

Studies on random testing have found that higher testing and discharge rates may result in higher overall detection of drug abuse in the workforce (see Durbin, et al., 1991). In terms of deterrence, continued drug use by identified users has been shown to be a substantial factor in overall drug use rates, suggesting that a substantial number of those testing positive for drugs are not deterred (Osborn & Sokolov, 1990; Stoloff, 1985).

The NRC considered several alternatives in determining the appropriate random drug testing rate for the nuclear power industry. The NRC considered conducting a study that would reduce the random testing rate of some licensees to 50 percent (experimental sites) and analyze that data against the data of licensees who would continue a 100 percent testing rate (control sites). The experiment would have to run for several years to allow for delayed effects caused by adjusted testing rates and to obtain a sufficient number of test results. The design of the study and the analysis of the results would have taken an additional year. The NRC has decided not to conduct such a study because: (i) the relatively long period of time required to collect and analyze the data would delay the Commission's action on this issue, and (ii) variables from site to site could mask any statistical differences between data from two test groups in the small absolute number of expected positive tests.

The NRC considered conducting an attitudinal study which would attempt to show worker attitudes toward, and their understanding of, random testing. It was hoped that this study would provide a better understanding of how this particular component of the FFD program deters substance abuse and would help

determine whether the perceived deterrent effect varies as the rate of random testing varies. The NRC has decided not to conduct this study because:

(i) the appreciable time that would be required to design and administer the survey and obtain OMB approval would delay the Commission's action on the issue, (ii) the study would tap worker attitudes rather than their behavior, and (iii) the results of the survey, by themselves, would not provide a solid basis for changes in the random testing rate.

The NRC also considered awaiting and evaluating the results of the Federal Railroad Administration's test program (56 FR 22905; May 17, 1991) which is now expected to be completed in late 1993. The NRC has decided not to await the results of this study because several factors may limit the application of the study to the nuclear industry:

- (i) The railroad industry has fewer units (i.e., there are fewer carriers than there are utilities) and more employees per unit than the nuclear power industry;
- (ii) The flexibility provided in Part 26 regarding cutoff levels, sanctions, and so forth suggests a potential for substantial variability of the deterrent effects within the nuclear power industry;
- (iii) A rail line's employees are located across the country and, thus, are subject to a range of local drug-use patterns and contexts. By contrast, the employees of a particular nuclear power plant tend to be

located within a single geographic region, with one prevailing set of local drug-use patterns; and

- (iv) The recently reported rate of substance abuse detected through random testing in the railroad industry is triple that in the nuclear power industry (approximately 1 percent as against 0.25 percent for power reactor licensee employees for the first 2 years).

Taking into account the uncertainties involved and the low rate of positive tests, the NRC has concluded that lowering the random testing rate from 100 percent to 50 percent would cause little, if any, decrease in the deterrent effect of random testing when applied to licensee employees, and that the rate of positive random tests for licensee employees is not likely to increase. However, experiences with random testing gained since publication of the rule have shown contractor and vendor employees testing positive at a rate approximately double that for licensee employees. Because of the higher rate of positive tests for contractor and vendor employees, the NRC is not proposing, at this time, to lower the rate for that population. See chart.

[INSERT CHART]

In conclusion, the NRC believes that the fitness-for-duty program can be revised to permit licensees to lower the random testing rate for licensee employees without significant impact on the overall effectiveness of the program. Therefore, the Commission is proposing that § 26.24(a)(2) be modified to permit licensees to randomly test their employees at an annual rate equal to at least 50 percent. This would not preclude licensees from

RANDOM TESTING

	<u>1990</u> # Tests/# Positive	<u>1991</u> # Tests/# Positive	<u>2-Year Totals</u> # Tests/# Positive	<u>2-Year</u> <u>Positive Rate</u>
Long-Term Contractors/Vendors	8,910/044	7,500/023	16,410/067	0.41%
Short-Term Contractors/Vendors	39,596/229	45,277/267	84,873/496	0.58%
All Contractors/Vendors	48,506/273	52,777/290	101,283/563	0.56%*
Licensee Employees	100,237/277	101,041/220	201,278/497	0.25%**

*The range for contractor employees during CY 1991 was between 0% and 1.53%,
with 7 sites having rates greater than 1.0%.

**The range for licensee employees during CY 1991 was between 0% and 0.87%,
with 5 sites having rates higher than 0.5%.

testing the employee workforce, or portions thereof, at a higher rate. For the present, the minimum rate of testing for contractor and vendor employees, whether under the licensee's program or an approved contractor or vendor program will remain at 100 percent. The NRC will continue to monitor implementation of the rule and will modify the rule in response to industry experience, advances in technology, or other considerations to ensure that the rule is achieving the general performance objectives set forth in 10 CFR 26.10.

Assuming that the deterrent effect of the 50 percent random testing rate were to be about the same as that for a 100 percent rate, the proposed rule could result in a reduction in the number of cases of drug and alcohol use by licensee employees detected each year through random testing. Recognizing this potential reduction in individuals being detected, the NRC is specifically interested in comments as to whether certain positions critical to the safe operation of a nuclear power plant, such as licensed reactor operators, should be excluded from any reduction of the random testing rate.

Bibliography

Durbin, N., Moore, C., Grant, T., Fleming, T., Hunt, P., Martin, R., Murphy, S., Hauth, J., Wilson, R., Bittner, A., Bramwell, A., Macaulay, J., Olson, J., Terrill, E., & Toquam, J. (1991). "Fitness for Duty in the Nuclear Power Industry: A Review of the First Year of Program Performance and an Update of the Technical Issues (NUREG/CR-5784)," Washington, DC: Nuclear Regulatory Commission.

Osborne, C.E., & Sokolov, J.J., (1990). "Drug Use Trends in a Nuclear Power Facility: Data From a Random Screening Program." In S.W. Gust, J.M. Walsh, L.B. Thomas, and D.J. Crouch, (Eds.,), Drugs in the Workplace: Research and Evaluation Data, Volume II. NIDA Research Monograph No. 100. Rockville, MD: National Institute on Drug Abuse, 25-43.

Stoloff, P.H. (1985). The Effectiveness of Urinalysis as a Deterrent to Drug Use, p.11, Washington, DC: Department of the Navy.

Environmental Impact: Categorical Exclusion

The NRC has determine that this proposed rule is the type of action described in categorical exclusion 10 CFR 51.22(c)(2). Therefore, neither an environmental impact statement nor an environmental assessment has been prepared for this proposed rule.

Paperwork Reduction Act Statement

This proposed rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). This rule has been submitted to the Office of Management and Budget for review and approval of the paperwork requirements.

Since the proposed rule would reduce the random drug testing rate for licensee employees from 100 percent to 50 percent, public reporting and recordkeeping burden for the collection of information is expected to be

reduced. The resulting reduction in burden is estimated to average 146 hours per site, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the estimated burden reduction or any other aspect of this collection of information, including suggestions for further reducing reporting burden, to the Information and Records Management Branch (MNBB-7714), U.S. Nuclear Regulatory Commission, Washington, DC 20555; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-3019, (3150-0146), Office of Management and Budget, Washington, DC 20503.

Regulatory Analysis

The Commission has prepared a draft regulatory analysis on this proposed rule. The analysis examines the benefits, cost savings, and costs of the alternatives considered by the Commission. The draft analysis is available for a fee at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC. Single copies may be obtained by writing to the U.S. Nuclear Regulatory Commission, Washington, DC 20555. Single copies of the analysis may be obtained from Loren L. Bush, Jr., Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

The Commission requests public comment on the draft regulatory analysis. Comments on the draft analysis may be submitted to the NRC as indicated under the ADDRESSES heading.

Regulatory Flexibility Act Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this rule will not have a significant economic impact on a substantial number of small entities. This proposed rule affects only the licensing and operation of nuclear power plants and activities associated with the possession or transportation of Category I material. The companies that own these plants do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the Small Business Size Standards issued by the Small Business Administration in 13 CFR Part 121.

Backfit Analysis

The NRC has determined that the backfit rule, 10 CFR 50.109, does not apply to this proposed rule, and therefore, that a backfit analysis is not required for this proposed rule, because these amendments do not impose more stringent safety requirements on 10 CFR Part 50 licensees.

List of Subjects in 10 CFR Part 26

Alcohol abuse, Alcohol testing, Appeals, Chemical testing, Drug abuse, Drug testing, Employee assistance programs, Fitness for duty, Management actions, Nuclear power reactors, Protection of information, Reporting and recordkeeping requirements, Sanctions.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is proposing to adopt the following amendment to 10 CFR Part 26.

PART 26 - FITNESS FOR DUTY PROGRAMS

1. The authority citation for Part 26 continues to read as follows:

Authority: Secs. 53, 81, 103, 104, 107, 161, 68 Stat. 930, 935, 936, 937, 939, 948, as amended (42 U.S.C. 2073, 2111, 2112, 2133, 2134, 2137, 2201); secs. 201, 202, 206, 88 Stat. 1242, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846).

2. In § 26.24, paragraph (a)(2) is revised to read as follows:

§ 26.24 Chemical Testing.

(a) * * *

(2) Unannounced drug and alcohol tests imposed in a statistically random and unpredictable manner so that all persons in the population subject to testing have an equal probability of being selected and tested. The tests must be administered so that a person completing a test is immediately eligible for another unannounced test. As a minimum, tests must be administered on a nominal weekly frequency and at various times during the

day. Random testing of contractor and vendor employees must be conducted at an annual rate equal to at least 100 percent of that workforce. Random testing of licensee employees must be conducted at an annual rate equal to at least 50 percent of that workforce.

* * * *

Dated at Rockville, Maryland, this _____ day of _____, 1993.

For the Nuclear Regulatory Commission.

Samuel J. Chilk,
Secretary of the Commission.

Enclosure B

Draft Regulatory Analysis

DRAFT

REGULATORY ANALYSIS OF PROPOSED REVISION
TO LICENSEE EMPLOYEE RANDOM TESTING RATE:
PART 26 - FITNESS FOR DUTY PROGRAMS

January 11, 1993

SUMMARY

The Nuclear Regulatory Commission (NRC) proposes to modify its current Fitness-for-Duty Program requirements. The proposed amendments of 10 CFR Part 26 would apply to all licensees authorized to construct or operate a nuclear power reactor. The amendments would reduce the random testing rate for licensee utility employees to an annual testing rate of 50 percent but maintain the 100 percent random testing rate for contractors and vendors. These proposed changes are based on a review of licensee program performance data, a literature review of detection and deterrence provided by random testing, and initiatives proposed by the Nuclear Management and Resources Council (NUMARC). This document contains a regulatory analysis of the proposed rulemaking. The document was prepared according to the guidance set forth in Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission, NUREG/BR-0058, Revision 1, May 1984.

The change in the random testing rate could reduce the number of licensee employees identified as using alcohol or drugs in violation of a licensee's fitness-for-duty policy, the potentially small increase in unidentified users continuing to work should not significantly affect the overall risk to the general public from plant operations.

Staff estimate that the proposed rule change would result in annual savings of approximately \$41,000 per reactor conducting offsite testing, and about \$44,000 per reactor conducting onsite testing, or \$4.9 million annual savings industrywide. The present value of the proposed rule change assumes an annual discount rate of five percent and an estimated operating life of twenty-five years. The present value of the proposed rule change is approximately \$607,000 per reactor conducting offsite testing and \$651,000 per reactor conducting onsite testing. The industrywide savings have a present value of approximately \$72.5 million.

CONTENTS

1.0	Introduction	1
1.1	Background	1
1.2	Statement of the Problem	2
1.3	Objectives of the Proposed Rulemaking	2
2.0	Reasonable Alternatives for Meeting the Regulatory Objective	3
2.1	Take No Action	3
2.2	Await Rulemaking Pending Further Study	3
3.0	Consequences	4
3.1	Estimation of Safety-Related Impacts	4
3.2	Estimation of Benefits and Cost Savings	5
3.3	Impact on Other Requirements	9
4.0	Decision Rationale	10

1.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) proposes to modify its current Fitness-for-Duty (FFD) Program requirements. The proposed amendments to 10 CFR Part 26 would apply to all licensees authorized to construct or operate a nuclear power reactor. The amendments would reduce the random testing rate for licensee utility employees to an annual testing rate of 50 percent but maintain the 100 percent random testing rate for contractors and vendors. These proposed changes are based on a review of licensee program performance data, a review of random testing rates in other industries, a review of detection and deterrence provided by random testing, and initiatives proposed by the Nuclear Management and Resources Council (NUMARC). This document contains a regulatory analysis of the proposed rulemaking. The document was prepared according to the guidance set forth in Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission, NUREG/BR-0058, Revision 1, May 1984.

1.1 BACKGROUND

The NRC issued FFD regulations on June 7, 1989 (54 FR 24468) applicable to licensees authorized to operate a nuclear power reactor and holding a permit to construct or operate a nuclear power plant. Licensee programs implementing the regulations were required to be in place by January 3, 1990. The regulations require affected licensees to implement fitness-for-duty programs to reasonably assure that nuclear power personnel are not under the influence of any substance which can adversely affect the performance of their duties. The FFD regulations establish chemical testing requirements and testing standards for the abuse or misuse of alcohol and drugs. Four types of testing are currently required: (1) pre-access testing; (2) random testing at an annual testing rate equal to 100 percent of the tested population; (3) for-cause testing; and (4) follow-up testing.

During the FFD rulemaking process in 1988, the Commission invited public comment on the rates of random testing that would provide an acceptable probability of detection and adequate deterrence (53 FR 36795 at 36796; September 22, 1988). Public comments strongly opposed a proposed 300 percent rate. NUMARC and most licensees proposed a 100 percent rate and recommended that this rate be reevaluated on the basis of utility experience and then be reduced to 25 percent, if such a change was warranted. As a result, the Commission selected an annual random testing rate equal to 100 percent of the workforce subject to testing. The Commission also indicated that it would consider reducing this rate in the future if it appeared that industry experience with the existing rate had been positive (54 FR 24468 at 24474; June 7, 1989).

On November 7, 1991, the Commission directed the staff to report on research into the deterrent effect of different testing rates and to present recommendations of the applicability of such work to the nuclear industry. SECY-92-271 informed the Commission that no research exists that directly addresses the issue of whether reducing the random testing rate would affect the deterrent effect of drug testing.

1.2 STATEMENT OF THE PROBLEM

The purpose of random testing is to assure that nuclear power plant workers are fit for duty by identifying current drug users, deterring drug users from further use, and deterring potential users from initial use.

Licensee program performance to date suggests that the rule has been effective in detecting and removing employees who violate the fitness-for-duty policy. As reported in NUREG/CR-5758, Volumes 1 and 2, in 1990, 148,743 random tests were conducted in the industry with an overall positive random test rate of 0.37 percent, or a total of 550 violations for drug or alcohol abuse. In 1991, 153,818 random tests were conducted in the industry with an overall positive random test rate of 0.33 percent, or a total of 510 violations for drug or alcohol abuse.

As reported by NUMARC in a letter from T. E. Tipton to B. L. Grimes dated September 20, 1991, the total lost productivity cost for 1990 was an estimated \$6,300,000 (an average of \$55,000 per reactor unit). Half of this lost productivity cost would be saved if the random testing rate was reduced to 50 percent for all licensee employees and contractors. With a 50 percent testing rate, annual savings due to reduced FFD program operating costs and reduced productivity losses would amount to about \$100,000 per unit, an industry savings of about \$12 million. Licensee employee positive rates have been relatively low. In 1990, 0.28 percent out random tests administered by licensees were positive. Contractor employees had twice the violation rate as licensee employees (0.56 percent were positive). Similarly, in 1991 positive random testing rates for licensee employees and contractors were 0.22 percent and 0.55 percent, respectively. Staff believes the cost savings associated with lowering the random testing rate for licensee employees could be substantial.

1.3 OBJECTIVES OF THE PROPOSED RULEMAKING

The Commission proposes that 10 CFR 26.24(a)(2) be modified to permit licensees to randomly test their employees at an annual rate equal to 50 percent. The 100 percent random testing rate would be maintained for contractors and vendors. The Commission believes that lowering the random testing rate for licensee employees to 50 percent would achieve the regulatory objective of establishing a rate that provides adequate detection and deterrence while being cost-effective.

2.0 REASONABLE ALTERNATIVES FOR MEETING THE REGULATORY OBJECTIVE

This section discusses the reasonable alternatives considered for meeting the regulatory objective identified in Section 1.3.

2.1 TAKE NO ACTION

One alternative to the proposed amendment would be to take no action. The current 100 percent testing rate for licensee employees would be maintained. This would be expected to result in detection levels similar to those found in the first two years of program performance. Any cost savings resulting from the proposed rule change would be foregone.

2.2 AWAIT RULEMAKING PENDING FURTHER STUDY

The Commission considered conducting a study in which the random testing rate of some licensees would be reduced to 50 percent. The test result data from these experimental sites would be compared with the results of licensees that would continue a 100 percent testing rate. The experiment would have to run for at least two years to allow for delayed effects caused by adjusted testing rates and to obtain a sufficient number of test results. The design of the study and the analysis of the results would have taken an additional year. The Commission also considered conducting an attitudinal study which would attempt to show worker attitudes toward, and their understanding of, random testing. The Commission also considered awaiting and evaluating the results of the Federal Railroad Administration's test program (56 FR 22905; May 17, 1991) which is now expected to be completed in late 1993. The Commission decided to proceed with this rulemaking because the research would have taken several years and would have provided no guarantee of shedding any further light on the subject of deterrence that would be useful in the Commission's attempts to identify an optimal random testing rate.

3.0 CONSEQUENCES

This section discusses the benefits, cost savings, and costs that may result from the implementation of the proposed rulemaking.

3.1 ESTIMATION OF SAFETY-RELATED IMPACTS

Random testing, like the many other elements of licensee fitness-for-duty programs, is intended to achieve the three general performance objectives of those programs. As discussed in the Commission's notice of proposed rulemaking, random urinalysis testing has two purposes: detecting current drug users and deterring drug users from further use or potential users from initial use (53 FR 36795 at 36810; September 22, 1988). While this proposed reduction of the random testing rate could result in fewer drug and alcohol abusers being detected, this change would have little effect on the overall effectiveness of licensee programs.

While intuition would indicate that lowering the random testing rate would tend to lower the deterrence value of random testing somewhat, a review of the literature on such deterrence effects makes clear the difficulty of accurately measuring or predicting such a decline. Deterrence is thought to be a function of the perceived risk of being detected, the severity of the sanctions involved, and the swiftness with which sanctions are applied as compared with the gratification derived from the illicit behavior. While these factors may directly affect the deterrence value of random testing, many other factors also influence people's attitudes toward drug and alcohol abuse. These include national drug use patterns; attitudes concerning health, safety, and employment risks of drug abuse; workforce demographic factors; and the effectiveness of unique fitness-for-duty program elements such as awareness training, pre-employment testing, for-cause testing, and measures to prevent subversion of the testing procedures. Because random testing is only one of the many factors influencing individuals' drug or alcohol use proclivities, it can be concluded that lowering the random testing rate to 50 percent for licensee employees will not cause a substantial decrease in the deterrence value of licensees' random testing programs for that segment of the workforce. (For further discussion regarding random testing rates and deterrence, see SECY-92-271.)

Lowering the random testing rate could result in fewer fitness-for-duty violations being detected as a result of random testing. Based on experience with licensee implementation of fitness-for-duty programs and in consideration of the many elements of the program, reduction in the testing rate (for licensee employees only) will have little impact on the overall effectiveness of licensees' fitness-for-duty programs. It is anticipated that such a reduction in the testing rate will not have much, if any, effect on the deterrent aspect of random testing. The potential reduction in the number of licensee employees identified annually as a result of a reduced testing rate should have no significant impact on the effectiveness of Part 26 programs.

3.2 ESTIMATION OF BENEFITS AND COST SAVINGS

The proposed amendment would result in significant cost savings to licensees due to reduced costs associated with testing of licensee employees and with time lost from work. Based on information reported by licensees to the NRC and contained in NUREG/CR-5758, Volumes 1 and 2, a total of 201,278 licensee employees were tested randomly in 1990 and 1991, an average of 100,639 employees in one year. On average, each reactor randomly tested 868 licensee employees (100,639 tests divided by 116 reactors). Under the proposed rule revision, reducing the random testing rate to 50 percent would result in 434 fewer random tests of licensee employees annually per reactor unit.

The total costs of testing are comprised of three cost categories: the costs of chemical testing of employee specimens, the employee's time away from work (productivity costs), and the costs of obtaining and testing blind performance tests. The estimated cost of testing licensee employees is based on the following assumptions:

- Based on information available to the NRC staff, 27 sites containing 42 reactor units currently conduct onsite testing, while the remaining 48 sites containing 74 reactor units send all specimens for offsite analysis.
- All specimens collected from licensee employees at 48 sites (74 reactor units) would be sent offsite to a NIDA laboratory for testing. The average cost of chemical testing by a NIDA laboratory is estimated to be \$47 per test in 1992 dollars. This cost includes specimen collection labor; shipping to an offsite laboratory, initial screening and, if necessary, confirmatory testing; and reporting of results to the licensee. NUMARC estimated the cost of testing in 1990 to range between \$15 and \$100 for off-site testing. However, this estimate did not include the cost of specimen collection, which was estimated to range between \$10 and \$115 per specimen.^{1, 2, 3}
- All specimens collected at 27 sites/42 reactor units would be analyzed

¹ Letter to Brian K. Grimes, NRC, from Thomas E. Tipton, NUMARC, September 20, 1991.

² Testing costs are very competitive. Evidence indicates that this competition is driving the costs of testing down, resulting in significant cost variations between licensees, laboratories, and geographic region. Testing costs may also vary because they can be calculated in several ways, making direct cost comparisons and industrywide estimates difficult. For instance, a licensee may use a flat fee contract where a laboratory provides testing services over a certain period regardless of the total number of tests submitted for analysis. A second method of calculating testing costs would be to charge a flat rate per specimen for the initial immunoassay screening, and pro-rate the more expensive costs of GC/MS testing, which may be required for relatively few of the total number of specimens. A third way to charge for laboratory testing is to charge separately for immunoassay screenings and GC/MS confirmatory testing. [For a review of testing methodologies, see NUREG/CR-5227 (1988), and NUREG/CR-5227, Supplement 1 (1989).]

³ Additional cost savings associated with a corresponding reduction in the number of alcohol tests are expected to be minimal.

onsite. All presumed positive specimens and 10 percent of all negative specimens (for onsite testing quality assurance) would be sent offsite to a NIDA-certified laboratory for analysis. The cost for testing specimens onsite is estimated to be \$50 per test. Cost savings associated with blind performance specimens are treated separately (see below). Testing costs for specimen collection and screening include the cost of assay kits and controls, labor and overhead for technicians, testing instrumentation (amortized or prorated), maintenance for instruments, disposable equipment, and administration. In 1990, the average cost of an onsite test was reported by licensees to be \$75, or approximately \$82 in 1992 dollars using the Projections of Gross National Product Price Deflator contained in NUREG/CR-4627, inclusive of the costs noted above. For purposes of this analysis, the staff estimate of \$50 per test is used.^{4,5}

- Additional cost savings for reactors with onsite testing by reducing the number of presumptive positives to be sent to a laboratory for analysis. According to Durbin et al. (NUREG/CR-5784, 1991), a study of 10 utility FFD programs found that 3.2 percent of on-site presumptive positive out of the total number of prescreen tests were sent to a laboratory for confirmation ($434 \text{ tests} \times 3.2\% = 14 \text{ tests}$). The estimated cost for sending presumptive positives to a laboratory for analysis is \$47. This includes shipping, laboratory assessment, and reporting results to the licensee.

⁴ The average cost per test reported by NUMARC is high relative to the NRC estimate in part because NUMARC included the cost of blind performance specimens on a pro-rated basis in its 1990 test cost estimate. In 1990, the first year of program implementation, licensees were required to submit blind performance specimens equal to 50 percent of all specimens sent to a NIDA laboratory in the first 90 days of program implementation and 10 percent thereafter. The rule currently requires licensees to submit a number of blind performance specimens equal to 10 percent of all specimens submitted to a NIDA laboratory for analysis. A proposed rule change in SECY-92-308 would lower this percentage to 5 percent. Since blind performance testing costs are not included in the staff's per specimen estimate but are treated separately, a lower cost estimate is used to account for these unique first-year costs.

⁵ One utility reported that its costs for specimen collection and screening per individual tested onsite are \$114 per specimen, inclusive of the costs noted above. This cost does not include blind performance testing costs or the one hour of productive time lost when the donor reports for testing. This licensee also reported that the current cost to send a specimen to the NIDA certified laboratory for immunoassay screening is \$22, and laboratory analysis (GC/MS confirmation only) is \$36 per specimen (or \$58 per test for presumed positive specimens and quality assurance specimens). These onsite specimen collection and screening costs appear to be relatively high in comparison with costs reported by NUMARC in 1990, in which the reported cost of testing ranged from \$17 to \$51, with an average reported cost of \$75 per specimen. Further, NUMARC's 1990 testing costs included the cost of submitting blind performance specimens; the utility's reported cost of \$114 per specimen does not. Because this one licensee's reported costs are at the high end of the spectrum of industry testing costs, the staff believes the lower estimate of \$50 per test should be used. In terms of total per reactor savings, if the \$114 cost per specimen for onsite testing and the \$58 cost for sending specimens offsite for laboratory analysis were used in lieu of the staff estimates of \$50 and \$47 respectively, the estimated annual savings per reactor conducting onsite testing would be \$72,442. This figure can be compared with the staff savings estimate of \$44,070 for reactors conducting onsite testing (see below). Since there is apparently wide variation in testing costs industrywide, staff believes that its more conservative estimate should be used to avoid overestimating the cost savings to be derived from the proposed rule change.

- The rule requires licensees with onsite testing programs to send 10 percent of the negative specimens collected to an offsite laboratory for analysis as part of their onsite laboratory quality assurance program ($[434 \text{ tests} - 14 \text{ tests}] \times 10\% = 42 \text{ tests}$). The estimated cost for sending onsite facility quality assurance specimens to a laboratory for analysis is \$47. This includes shipping, laboratory assessment, and reporting results to the licensee.

Licensees will also realize cost savings in reduced labor costs by reducing the time spent testing licensee employees. Assumptions for labor savings are as follows:

- It would take an employee 1 hour to travel to the test site, be tested, and return to work.
- Since the type of employee (job classification) affected by the proposed rulemaking would vary widely, a standard licensee employee wage rate of \$45.06 per hour including a fringe benefit multiplier of 2.0 is assumed. The average utility employee wage rate was derived from information presented in NUREG/CR-4627, Abstract 6.3, Table 4.1. The average 1988 base wage rate was \$16.56. With a multiplier of 2.0 for fringe benefits, the wage rate was \$33.12 per hour. Inflating to 1992 costs using an 8 percent average annual personnel wage rate increase, the estimated average 1992 utility employee wage rate is \$45.06 per hour.

Licensee's costs of submitting blind performance test specimens to HHS-certified laboratories, as required by section 2.8(e)(2) of Appendix A to the rule, would also be decreased by this proposed revision. (The rule currently requires licensees to submit a number of blind performance specimens equal to 10 percent of the total number of specimens collected; a proposed rule change in SECY-92-308 would lower this to 5 percent, which is the rate used for this analysis.) Blind performance costs are treated separately from other testing costs for purposes of analysis. Blind performance tests can cost \$30 to \$35 for manufactured specimens, including a master list of what the specimens contain. Other costs associated with blind proficiency testing include the cost of MRO review, decoding the master sheet against the test results reported by the laboratory, and contacting the laboratory when blind proficiency questions arise or errors are found. Licensees who use off-site NIDA-certified laboratories may prefer to prepare their own spiked samples for off-site screening. The total estimated cost for a blind performance testing specimen prepared by the licensee is estimated to be about \$3, plus the cost of testing, MRO review, and disposition. Overall, the costs per blind performance specimens may be expected to range from \$50 to \$80 per specimen when these factors are considered.⁶ The average cost is therefore assumed to be \$65, inclusive of the costs noted above. There would be no additional lost productivity savings since the specimens would be collected at the same time and location.

⁶ Arthur Zebelman, Laboratory of Pathology, personal communication, February 27, 1992.

The total savings per reactor unit for those licensees sending all specimens for offsite testing is estimated as follows:

Testing Cost Savings:	434 tests x \$47.00/test =	\$20,398
Blind Performance Testing Savings:	434 tests x 5% x \$65/test =	1,411
Labor Cost Savings:	434 tests x 1 hour x \$45.06/hour =	19,556
Total Cost Savings Per Reactor:		\$41,365

The total savings per reactor unit for those licensees that conduct onsite testing is estimated as follows:

Testing Costs Savings:	434 tests x \$50/test =	\$21,700
Presumed Positive Test Savings (assuming a 3.2% positive rate)	14 tests x \$47/test =	658
Quality Assurance Test Savings (assuming 10% of negative specimens):	42 tests x \$47/test =	1,974
Blind Performance Testing Savings (assuming a 5% testing rate):	56 tests x 5% x \$65/test =	182
Labor Costs Savings:	434 tests x 1 hour x \$45.06/hour =	19,556
Total Cost Savings Per Reactor:		\$44,070

Licensees would be required to make slight changes to their fitness-for-duty program policies and procedures if the random testing rate for licensee employees is reduced from 100 percent to 50 percent. It is expected that these revisions would be made concurrently with policy and procedure revisions made in response to proposed rule amendments proposed in SECY-92-308. Therefore, it is assumed that there would be no additional costs for policy and procedure revision resulting from the proposed rule change addressed here.

Staff estimates that the proposed amendment would result in annual savings of approximately \$41,000 per reactor conducting offsite testing, and about \$44,000 per reactor conducting onsite testing, or \$4.9 million annual savings industrywide. The present value of the proposed rule change assumes an annual discount rate of five percent and an estimated operating life time period of twenty-five years. The present value of the proposed rule change is

approximately \$607,000 per reactor conducting offsite testing and \$651,000 per reactor conducting onsite testing. The industrywide savings have a present value of approximately \$72.5 million.

3.3 IMPACT ON OTHER REQUIREMENTS

This proposed rule change is not expected to have an impact on other rule requirements. The NRC is currently proposing to modify the FFD rule (SECY-92-308).

4.0 DECISION RATIONALE

The purpose of the proposed rule change is to lower the 100 percent annual random for licensee employees to 50 percent. The proposed action is recommended in order to establish a more cost-effective and less burdensome testing frequency for licensees while continuing to ensure effective detection and deterrence provided by random unannounced testing of the workforce. As discussed in Section 2, alternatives to the proposed rule were considered. Staff found that the potential cost savings justify the result of fewer violations being detected, since there would continue to be sufficient deterrence provided by random testing if the rate was lowered from 100 percent to 50 percent.

ENCLOSURE C

DRAFT CONGRESSIONAL LETTER

DRAFT CONGRESSIONAL LETTER

Dear Mr. Chairman:

The Nuclear Regulatory Commission is proposing to amend its Fitness-for-Duty Rule [10 CFR Part 26, which was published in the Federal Register on June 7, 1989 (54 FR 24468)] to permit licensees to randomly test their employees at a rate equal to 50 percent and maintain the 100 percent random testing rate for contractors and vendors.

Enclosed for your information is a copy of the proposed rule as approved by the Commission for publication in the Federal Register for public comment.

Sincerely,

Dennis K. Rathbun, Director
Office of Congressional Affairs

ADDRESSEES*:

The Honorable , Chairman
Subcommittee on Nuclear Regulation
Committee on Environment and Public Works
United States Senate
Washington, DC 20510
cc: Senator

The Honorable , Chairman
Subcommittee on Energy and the Environment
Committee on Interior and Insular Affairs
United States House of Representatives
Washington, DC 20515
cc: Representative

The Honorable , Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515
cc: Representative

The Honorable , Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations
United States House of Representatives
Washington, DC 20515
cc: Representative

The Honorable , Chairman
Subcommittee on Energy and Water Development
Committee on Appropriations
United States Senate
Washington, DC 20510
cc: Senator

*Updated names and committees pending

ENCLOSURE D

DRAFT PUBLIC ANNOUNCEMENT

NRC PROPOSES AMENDMENTS TO
FITNESS-FOR-DUTY RULE

The Nuclear Regulatory Commission is proposing to amend its Fitness-For-Duty rule which requires licensees to randomly test their employees for substance abuse.

The present requirement calls for random testing at an annual rate of 100 percent of a licensee's work force. As proposed, licensees would be permitted to reduce the annual rate to 50 percent for licensee employees but maintain a 100 percent rate for contractor and vendor employees. In addition, the Commission is inviting specific comments as to whether positions critical to the safe operation of a nuclear power plant should be excluded from the proposed reduction in the random testing rate.

The proposed action is based on the Commission's review of the experiences gained from its Fitness-For-Duty rule since it first became effective in 1989, including the fact that the rate of substance abuse detected as a result of the NRC-mandated program has been low--about 0.25 percent for power reactor licensee employees over the two years.

Written comments on the proposed amendment to Part 26 of the Commission's regulations should be received by (date). They should be addressed to the Secretary of the Commission, Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Services Branch.



POLICY ISSUE

(Notation Vote)

August 4, 1992

SECY-92-271

For: The Commissioners
From: James M. Taylor
Executive Director for Operations
Subject: APPROPRIATE RANDOM DRUG TESTING RATE FOR THE NUCLEAR POWER INDUSTRY
Purpose: To inform the Commission of the results of research on the deterrent effect of different testing rates and present options for changes to the required rate for Commission action.
Category: This paper covers a significant policy question related to the drug testing program for the nuclear power industry.
Issue: Whether to reduce the rate of random drug testing that 10 CFR Part 26 requires.
Background: The Commission Paper, SECY-91-293, "Assessment of Implementation of the Fitness-For-Duty (FFD) Rule and Need for Changes to the Rule," was published on September 17, 1991. One of the issues discussed in the paper was the rate of random testing that is imposed on the nuclear power industry.

During the FFD rulemaking process in 1988, the Commission had specifically invited the public to comment on the rates of random testing that would provide an acceptable probability of detection and adequate deterrence (53 FR 36796, dated September 22, 1988). Public comments strongly opposed a

NOTE: TO BE MADE PUBLICLY AVAILABLE WHEN THE FINAL SRM IS MADE AVAILABLE

Contact:
Loren L. Bush, NRR
504-2944

9208100211

proposed 300 percent rate; NUMARC and most licensees proposed a 100 percent rate, which they recommended be re-evaluated on the basis of utility experience and be reduced to 25 percent, if warranted (54 FR 24472, dated June 7, 1989). As a result, the Commission indicated that it would consider reducing testing rates after several years if it obtained information that experience in the industry with the existing rate had been positive (54 FR 24474).

In SECY-91-293, the staff recommended that the NRC conduct a test program, using NRC licensees, to demonstrate the effectiveness of various testing rates and program strategies. By a staff requirements memorandum (SRM) dated November 7, 1991, the Commission directed the staff to report on work that has been done on the deterrent effect of different testing rates with recommendations of the applicability of such work to the nuclear industry. The results of the Railroad Administration's test program on different random testing rates were to be included in the staff's evaluation and analysis.

Discussion:

Enclosure 1 is a report entitled "Deterrent Effects of Testing Rates," that the Human Affairs Research Centers of Battelle prepared. The report states that no research exists that directly addresses the issue of whether reducing the random testing rate affects the deterrent effect of drug testing. The report discusses risks associated with drug use that an individual may perceive and the importance of random testing as a component of a broad-based workplace program directed to fitness and reliability of the workforce.

Researchers conclude from drunk driving studies that the risk of incurring strong sanctions appears to have a strong deterrent effect on substance abuse. In addition, the report points out that research on human decision-making and risk assessment suggests that an individual's perceptions of the risk of being tested and the risk of drug use being detected are not based on rational calculations of probabilities alone. Individuals tend to overestimate the likelihood of low probability events (selection for testing) and tend to incorporate into their decision-making the information that is most easily recalled.

The report states that random testing is believed to have an important deterrent effect in an FFD program. A review of studies of certain large government workforce drug abuse programs revealed that no research exists that directly addresses the issue of whether reducing the random testing rate affects the deterrent effect of drug testing. The studies did, however, reveal that a wide variation in the rate of testing exists within the government. In Federal agencies, the rate of testing ranges from a low of 4 percent

of the population subject to random testing annually to a high of 200 percent. This variability is consistent with the lack of consensus about the rate that optimally balances the needs for detection and deterrence with the needs of employers and employees.

Although earlier Department of Defense efforts, previously reported in NUREG/CR-5527 (page 4-1), indicate a greater deterrence effect at higher random testing rates than required by 10 CFR Part 26, the inquiry the Federal Railroad Administration (FRA) is currently undertaking represents the first experimental effort to explore the consequences of reduced random testing rates. Four railroads conducting random testing at a 50 percent rate serve as a control group and four railroads testing at a 25 percent rate serve as the test group. This study will involve approximately 80,000 railroad employees, which is roughly 90 percent of the railroad employee population. Several factors may limit the application of the FRA study to the nuclear industry. The railroad industry has fewer units (i.e., there are fewer carriers than there are utilities), and more employees per unit, than the nuclear power industry. The flexibility provided in Part 26 regarding cut-off levels, sanctions, and so forth, suggests a potential for substantial variability of the deterrent effects within the nuclear power industry. A rail line's employees are located across the country and, thus, are subject to a range of local drug-use patterns and contexts. By contrast, the employees of a particular nuclear power plant tend to be located within a single geographic region, with one prevailing set of local drug-use patterns. Finally, the recently reported rate of substance abuse detected through random testing in the railroad industry is triple that in the nuclear power industry (approximately 1% as against 0.25% for power reactor licensee employees for the first two years). Hence the FRA findings, when they are made available, should be cautiously applied because of differences between the nuclear power industry and the railroad industry. The study began on July 1, 1991, and, following the 12-month extension announced by the FRA (57 FR 29550, dated July 2, 1992), the study is now expected to be completed in late 1993. The extension notice also indicated that there were similar positive test rates between the railroads' control group which tests at a 50 percent rate and that of the test group which tests at a 25 percent rate.

In summary, no research data exists that statistically addresses the link between a testing rate and the deterrent effect of that testing rate. Further, no research appears to be planned that will provide conclusive information on testing rates that will be directly applicable to the NRC's FFD testing approach.

In view of the foregoing, the Commission could adopt one of the following options:

Option 1. Reduce, by regulatory exemption, the random testing rate of some licensees to 50 percent and analyze that data against the data of licensees who would continue a 100 percent testing rate.

The study to analyze this option would establish experimental sites and control sites that are similar with respect to drug use by workers and with respect to drug use in the surrounding communities. The experiment should run for at least two years to allow for delayed effects caused by adjusted testing rates and to obtain a sufficient number of test results. The design of the study and the analysis of the results would take an additional year.

Pro: a. Analysis may provide a more objective basis for either reducing the testing rate or maintaining the testing rate at its current level.

b. Selected sites would probably experience significant cost savings from reducing their random testing rate to 50 percent.

Con: a. Data would have to be collected over a relatively long period of time.

b. Variables from site to site could mask any statistical differences between data from two test groups in view of the small absolute number of expected positive tests.

Resource Estimate:

A contractor cost of about \$200,000 would be incurred over a 30 month period for design, analysis, and reporting on the experiment. It is expected that 1/2 FTE would be needed to recruit and select licensee participants, obtain OMB clearance, monitor contractor activities, and review and analyze the results of the experiment.

Option 2. Conduct an attitudinal study within the nuclear industry to support a decision on whether or not

to change the random testing rate.

Pro: a. Results may show worker attitudes toward, and their understanding of, random testing. This should provide a better understanding of how this particular component of the FFD program deters substance abuse.

b. Results would help determine whether the perceived deterrent effect, and the workers' understanding of it, varies as the rate of random testing varies (i.e., 100% to 50%).

Con: a. Survey design, OMB approval, and survey administration would take appreciable time.

b. The primary limitation of this type of research is that it taps worker attitudes, rather than their behavior. Workers would be unlikely to respond to questions about their own drug- and alcohol-related behaviors.

c. The results of the survey, by themselves, would not provide a solid basis for changes in the random testing rate.

Resource Estimate:

A contractor cost of about \$140,000 would be incurred needed for a 12 month period for design, conduct, analysis, and reporting on the survey. It is expected that 1/2 FTE would be needed to obtain OMB clearance, communicate the purpose of the survey to affected licensees, monitor contractor activities, and review and analyze the results of the survey.

Assuming participation by all 75 sites, industry costs for printing and mailing employee names, addresses, and telephone numbers to the contractor is estimated to be \$135.00 per site; a total of about \$10,000.

Approximately 3,500 participants are needed for the survey to have validity. If participants were to be paid \$5.00 for being selected for the

survey (a common practice to elicit a response), it would cost the NRC an additional \$17,500.

Option 3.

Retain the 100 percent random testing rate and continue to review licensee performance reports. Await and evaluate results of the Federal Railroad Administration test program, and perhaps await future research and development programs, to determine if a change in testing rates is justified.

- Pro: a. The 100 percent testing rate has proven to be an effective testing rate.
b. Maintenance of a higher rate results in a greater number of detections and possible "weeding out" of hard-core drug abusers.

- Con: a. Higher testing rates may provide little or no additional deterrent effect over a lower rate while maintaining substantial program costs, including the cost of time away from the work station.
b. The NRC which has adopted a 50% testing rate, would be testing at a lower rate than the industry it regulates.
c. Achieves no cost savings.

Resource Estimate:

Cost to NRC is within the scope of routine staff efforts.

Option 4.

Change 10 CFR Part 26 to require a 50 percent rather than a 100 percent random testing rate.

- Pro: a. Deterrent effects may not be significantly reduced even though no empirical evidence supports this conclusion.
b. NRC and nuclear power industry testing rates would be the same.
c. Achieves significant cost savings. NUMARC estimated that a reduction to

50 percent would save \$97,000 per reactor unit per year.

- Con: a. Deterrent effects could be reduced even though no empirical evidence supports this conclusion.
- b. Assuming that the deterrent effect of the 50 percent random testing rate were to be about the same as that for a 100 percent rate, half (250) of the approximately 500 cases of drug and alcohol use detected each year through random testing of licensee employees and contractors in the nuclear power industry would go undetected.

Resource Estimate:

Cost to NRC is within the scope of routine staff efforts for publishing changes to the Code of Federal Regulation.

Option 5: Change 10 CFR Part 26 to permit licensees to randomly test their employees at a rate equal to 50 percent, and maintain the 100 percent random testing rate for contractors and vendors.

- Pro: a. The testing rate would test a population segment found more likely to abuse drugs at a higher rate.

This option would recognize the results of random testing conducted during the first two years under 10 CFR Part 26, which indicated that the nationwide positive rate for licensee employees (0.25%) was appreciably lower than it was for contractors and vendors (0.56%). Enclosure 2 is a matrix summarizing this data.

- b. Some inferences could be drawn on the effect of testing rates on deterrence by examining changes over time in contractor and licensee employee testing rates.

c. The testing rate for licensee employees would be the same as that recently selected by the Commission for NRC testing of employees in designated positions. (The two groups have similar positive test rates.)

d. Forming separate testing pools for licensee and contractor employees would be consistent with NUMARC comments made on the proposed random testing rate on November 18, 1988.

Con: a. Maintaining two population pools and selection processes would impose some additional burden on licensees.

b. Because contractors comprise one-third of the randomly tested population, one-third of the cost savings projected by NUMARC for the reduced testing rate would not be realized.

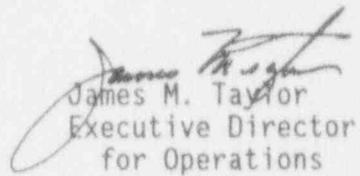
c. Assuming that the deterrent effect of the 50 percent random testing rate were to be about the same as that for a 100 percent rate, half (110) of the approximately 220 cases of drug and alcohol use by licensee employees detected each year through random testing would go undetected.

Resource Estimate:

Cost to NRC is within the scope of routine staff efforts for publishing changes to the Code of Federal Regulations. Analysis of the data trends by a contractor after some time has elapsed with the new rates in effect is expected to be accomplished within current budget allocations.

Recommendation: The staff recommends that the Commission approve Option 5 and direct the staff to prepare an appropriate rulemaking package.

Coordination: The Office of the General Counsel has no legal objections to any of the options in this paper.



James M. Taylor
Executive Director
for Operations

Enclosures:

1. Letter Report, "Deterrent Effects of Random Testing Rates"
2. Matrix, "Random Testing Rates"

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Tuesday, August 18, 1992.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Tuesday, August 11, 1992, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION:

Commissioners

OGC

OCAA

OIG

OCA

OPA

OPP

REGIONAL OFFICES

EDO

ACRS

ASLBP

SECY

ENCLOSURE 1

Letter Report,
"Deterrent Effects of
Random Testing Rates"

Letter Report

Deterrent Effects of
Random Testing Rates

May 21, 1992

J. Hauth
H. Shaklee
N. Durbin
W. Grady
A. Roussel

Prepared for:

U.S. Nuclear Regulatory Commission
NRR/RSGB
Washington, D.C.

Prepared by:



4000 N.E. 41st Street
Seattle, WA 98105-5428

RANDOM TESTING AND DETERRENCE: RESEARCH FINDINGS AND ISSUES

INTRODUCTION

Background

On June 7, 1989, the Commission published 10 CFR Part 26, "Fitness For Duty Programs," in the Federal Register (54 FR 24468, 1989). In reviewing the fitness-for-duty (FFD) rule implementation and need for changes to the rule, reducing the testing rate from the 100% industry standard was considered since it would significantly reduce testing costs for licensees. However, little empirical evidence is available on the effects this would have on overall deterrence and further investigation is needed. Staff recommended a phased study to evaluate the deterrent effect of various random testing rates in SECY 91-293.

In approving staff recommendations to develop a phased study on the effectiveness of various random testing rates in deterring substance abuse, the Commission directed staff to include applicable evidence from outside the nuclear industry. Specifically, the results of the Federal Railroad Administration's (FRA) test program were to be included in the review, along with other studies describing attitudes toward various random testing rates and actual test results, if any. The Federal Railroad Administration (FRA) is currently attempting to address the question of random testing rates and deterrence in the railroad industry (56 FR 22905, 1991). In the experimental design, four railroads are testing their employees at a 25% rate for a period of one year, and four additional railroads will serve as a control group, testing at the industry standard 50% rate. The FRA expects the test program to provide data that will help it determine whether there is a significant difference in the percentage of employees exhibiting drug test positives according to the testing rate. The study began on July 1, 1991 and results of the study are expected in late 1992. Findings of the FRA study will be provided to the Commission when they are published. These findings should be interpreted with caution in the nuclear power industry, due to differences between the two industries, as outlined below.

Purpose and Organization of This Report

This report describes the findings concerning random testing rates and deterrence, and provides recommendations concerning areas for further investigation. The first section presents responses to the Commission's specific inquiry, including the finding that no research was located that addresses the issue of the effect on deterrence of reduced random testing rates. The second section discusses several studies pertaining to deterrence and the perceived risks of drug abuse, and illustrates the importance of accounting for perceptions of

individual risk in studies of drug abuse and deterrence. The third section discusses the deterrent effectiveness of fitness-for-duty programs in various settings, addressing both the overall effectiveness of broadbrush programs and the singular effects of individual program elements. This review suggests that drug abuse deterrence may be achieved from a variety of fitness-for-duty program elements, such as pre-employment testing, for-cause testing, and random testing, although no research has directly investigated the singular effectiveness of random testing in deterring drug abuse. The report closes with conclusions and recommendations for further research.

EXISTING EVIDENCE ON THE DETERRENT EFFECT OF RANDOM TESTING RATES

A thorough review of studies of large workforce drug abuse programs such as those required by various agencies of the U.S. Department of Transportation (DOT) and the U.S. Department of Defense (DOD) revealed that no research exists that directly addresses the issue of whether reducing the random testing rate affects the deterrent effect of drug testing.¹ Although earlier DOD efforts previously reported in NUREG/CR-5227 (page 4-2) indicate a greater deterrent effect from higher random testing rates, the inquiry currently being undertaken by the Federal Railroad Administration (FRA) represents the first experimental effort to explore the consequences of reduced random testing rates. This research will be completed in late 1992.

In the absence of existing research into the deterrent effects of varying random testing rates, an in-depth exploration of the issues of deterrence is suggested. In the following sections, a general review of the relevant literature on drug abuse and deterrence is presented.

PERCEIVED RISKS OF DRUG ABUSE AND DETERRENCE

Perceptions of risk are believed to play a large role in deterring drug abuse, and should be considered when addressing the effects of different testing programs in the nuclear industry. Relevant perceived risks include the risk of being tested, the risk of drug use being detected, the health and safety risks inherent in substance abuse, and the risk of incurring sanctions. Research on human decision-making and risk assessment suggests that individuals' perceptions of the risk of being tested and the risk of drug use being detected are not based on rational calculations of probabilities alone. Individuals tend to overestimate the likelihood of low probability events, for example, and to incorporate into their decision-making the information that is most easily recalled, and that appears most noteworthy, independent of its relevance (Slovic et al., 1988).

¹ A description of the literature review methodology is provided in Appendix A to this enclosure.

Perceptions of the risks of drug abuse are expected to be affected by drug type, situational context, and the sanctions involved (Bachman, Johnston, & O'Malley, 1990; U.S. Department of Education, 1990; Hurst, 1985; Waldo and Chiricos, 1972). While rational risk assessments of the health, safety, and employment risks of drug abuse play a role in individuals' decisions to use drugs, such choices are also affected by factors such as peer pressure, emotional fatigue, or stress.

Providing credible and useful information for making decisions regarding drug abuse in relation to personal and public health and safety has been shown to have a strong deterrent effect among high school students and may have a similar effect among nuclear power plant workers. Risk perceptions regarding drug abuse are also likely to vary by drug type. Among high school students, marijuana use has been reduced by increased research and credible reports on the adverse effects of marijuana, and students' first-hand observation of peers who exhibited long-term negative consequences of marijuana use. Risk perceptions are also used to explain the recent decline in cocaine use in this country, although the decline in cocaine use was also affected by some specific instances, namely, the cocaine-related deaths of some well-known athletes (U.S. Department of Education, 1990; Bachman, Johnston, & O'Malley, 1990).

Studies of drunk driving and deterrence suggest that sanctions for drug abuse should be strong, consistent, and well understood in order to have maximum deterrent effect on risk perceptions (Beshai, 1984; Voas, 1986; Peck, Sadler, & Perrine, 1985; Hurst, 1985). Although the situational context of driving under the influence of alcohol (DUI) and deterrence is very different from nuclear power operations, similar themes are also evident. Driving under the influence involves a decision to willingly consume an impairing substance, it involves personal and public safety, and it involves the threat of formal sanctions against such behavior. Strong sanctions (license suspensions) appear to be more effective than any known form of alcohol education or rehabilitation, although some rehabilitation programs appear to be effective in reducing DUI recidivism (Peck, Sadler, & Perrine, 1985). When sanctions are lenient, inconsistent, or not well understood, deterrence is adversely affected (Voas, 1986). Studies on the deterrent effect of random road blocks on drivers have shown that randomly testing drivers substantially decreases drunken driving incidents (Dunbar, Penttila, & Pikkarainen, 1987).

DRUG ABUSE PROGRAMS AND DETERRENT EFFECTIVENESS

The review of studies on drug testing programs suggests that drug testing effectively reduces drug use, especially when random unannounced testing is used. However, in the nuclear power industry, random testing is only one element of a "broadbrush" approach designed to provide maximum detection and deterrent effect (Barnes et al., 1988; Moore et al., 1989;

AMA, 1991; LeRoy, 1991; LeRoy, 1990). Other program elements in a broadbrush program expected to have a deterrent effect are pre-employment screening, behavioral observation, for-cause testing, stiff sanctions for substance abuse, workplace security measures, policy and awareness training, health promotion programs, and employee assistance programs. There are several approaches to assessing the singular effectiveness of random testing in fitness-for-duty programs. One approach is a survey of attitudes and perceptions relevant to random testing, fitness-for-duty programs, and drug use. An alternative approach is an experimental trial, in which random test rates are changed at some sites and held steady at others, to determine if there is a change in the rates of detected substance abuse. The Federal Railroad Administration study currently underway is the first such experiment; it is discussed in detail below. Without evidence from such studies, it is difficult to ascertain the independent or singular effect of random testing within fitness-for-duty programs. Thus, the question of what is the most effective rate of random testing remains unanswered. The following section first addresses the deterrent influence of the broadbrush approach taken as a whole, and then examines the singular deterrent effect of particular program elements.

Deterrent Effects From Broadbrush Approaches

To evaluate the overall effectiveness of broadbrush programs, studies have explored the rates of drug use in industries with comprehensive fitness-for-duty programs. Broadbrush policies and procedures have demonstrated a deterrent effect in various Department of Defense (DOD) drug testing programs (Bray, Marsden, & Rachal, 1990; Bray et al., 1988; Cohen, 1986; Stoloff, 1985).² However, comparisons of military drug and alcohol abuse with civilian counterparts must be made cautiously, since studies have shown that military personnel and civilians differ in important ways. Standardized comparisons of drug and alcohol use among military personnel and civilians were conducted by Bray, Marsden, and Peterson (1991). The military personnel and civilian data sets were matched for sociodemographics (e.g., age, sex, race, education) and the geographic location of respondents. The study found that military personnel were significantly less likely to use drugs than their civilian counterparts, but more likely to abuse alcohol (this result may be related to the lack of testing for alcohol in the DOD program). These findings suggest that the military's broadbrush fitness-for-duty program policies and procedures are effective in reducing drug use, but not effective in reducing alcohol abuse. Declining rates of drug abuse in the military may also be attributed to changing military workforce demographics. Today the military population is older, has more officers, more married personnel, and personnel are better educated, all of which are associated with lower levels of drug use (Bray, Marsden, & Rachal, 1990). Declines in drug use rates noted in the military and in other industries may also be due to increasing awareness of the risks of drug abuse within the general population.

² See NUREG/CR-5227 (Barnes et al., 1988) and NUREG/CR-5227 Supplement 1 (Moore et al., 1989) for discussions of various elements of DOD drug testing programs.

Data on fitness-for-duty program effectiveness in various industries are available but limited.³ Fitness-for-duty programs have shown a deterrent effect in the nuclear power industry (Osborn & Sokolov, 1989), and in the railroad industry (Taggart, 1989). Similar to results found in the military, a national survey conducted by the American Management Association (AMA) (1991) found that positive test results for drug use among surveyed firms were declining while the number of firms with random drug testing provisions was increasing.⁴ Although the decline in positive drug test rates was attributed in part to the implementation of random testing procedures, it was also attributed to increased education and awareness policies, as advised by federal regulatory agencies and NIDA. These studies have shown a deterrent effect from broadbrush fitness-for-duty program policies and procedures, but have not demonstrated the singular effectiveness of program elements. The following discussion provides a review of the literature concerning the deterrent effect of pre-employment, for-cause, and random testing.

Pre-Employment Testing

Individual fitness-for-duty program elements are believed to have singular effects on overall deterrence (Crant & Bateman, 1990; Murphy, Thornton, & Reynolds, 1990; LeRoy, 1991; LeRoy, 1990). In the nuclear industry, pre-employment testing has been one of the most effective fitness-for-duty program elements in terms of detection (Durbin et al., 1991), but the effect of pre-employment testing on deterrence in the nuclear industry is unknown. A military study has assessed the deterrent effect of pre-employment testing (MMWR, 1989). The military tested one set of applicants without informing them prior to the test (test results were not linked to applicants). The second sample of pre-employment applicants were informed that they would be tested. Differences in test results between the two samples showed dramatically lower positive test results for marijuana and cocaine use among the informed applicants. This may be due to users abstaining from marijuana and/or cocaine after being notified of a drug test, users withdrawing from the application after being notified of the testing requirement, and/or users refraining from applying altogether. Pre-employment testing may also have a long-term effect on deterrence in contributing to a work climate that is intolerant to drug abuse.

For-Cause Testing

Another fitness-for-duty program element believed to have a strong detection and deterrent effect is the referral of employees by supervisors for drug testing and/or employee assistance (i.e., for-cause referral) (Googins & Kurtz, 1980; Hoffman & Roman, 1984). A thorough

³ See NUKEG/CR-5784 (Durbin et al., 1991) for a discussion of the prevalence of workplace drug abuse programs in American industry.

⁴ Specific numbers on the number of tests and positive test results not available.

review of the literature yielded no studies directly addressing the singular deterrent effects of for-cause testing in a broadbrush fitness-for-duty program.

Periodic Testing

Periodic testing is also expected to deter drug use among some users, but it may also foster increased drug use among other users. In studying periodic testing of athletes, Coombs and Ryan (1990) found that some athletes actually increased their drug use as a result of periodic drug testing. This is due to the athletes' perception that, once the test was over, it cleared the way for unbridled drug use until the next annual test. This indicates that periodic testing may be counterproductive when used as a stand-alone method to assess fitness-for-duty, and underscores the importance of unannounced, unpredictable testing to effectively deter drug abuse.

Random Testing

Random testing is believed to have an important deterrent effect in a fitness-for-duty program, yet little research has addressed this issue directly (LeRoy, 1990; Institute for a Drug-Free Workplace, 1991).

Studies on random testing have found that increasing testing and discharge rates may increase overall detection of drug abuse in the workforce.⁵ In terms of deterrence, continued drug use by identified users (recidivism) has been shown to be a substantial factor in overall drug use rates, suggesting that a substantial number of those testing positive for drugs are not deterred (Osborn & Sokolov, 1990; Stoloff, 1985). Increasing random testing rates and discharge rates for repeat users lowers the overall prevalence rates by simply removing repeat offenders. Unique random testing practices may affect deterrence. In conducting their random testing program, for example, the military has conducted "unit sweeps" so that an entire unit is tested instead of testing randomly at the individual level across units. Units may be aware that testing is to be conducted prior to the event because of pre-testing notification by their commander, for instance. This factor is believed to potentially lower the overall deterrent effect of random testing (Stoloff, 1985).

In establishing random testing rates, the common practice is to weigh the need for detection and deterrence against the need to refrain from overly burdensome requirements, cost-effectiveness considerations, and employee fairness issues. In establishing a 50% random testing rate for operators of natural gas, liquefied natural gas, and hazardous liquid pipeline

⁵ The effects of various random testing sampling strategies and overall detection rates are well-documented and are not repeated here. For a discussion of random testing rates and associated probabilities of detection for different types of drug abuse, see Durbin et al., 1991.

operations, for instance, the Department of Transportation (DOT) Research and Special Programs Administration (RSPA) stated:

"RSPA reiterates that a 50% testing rate is necessary to establish a valid confidence level as well as to provide an adequate deterrent to drug use by employees. During the comment period on the proposed rule, RSPA requested specific advice on what the random testing rate should be. Although many commenters suggested rates of 10-20%, none provided any data to support a particular level. RSPA, therefore, chose a random testing rate of 50% in part based on DOT's experience with its own internal drug testing program, as well as the rates used by the military services. Although the military had used higher rates to achieve the deterrent effect referred above, RSPA believed that the 50% rate offered a sufficient balance between a rate high enough to deter use while keeping costs reasonable" (54 FR 51842, 1989, p. 51846).

In some cases, agencies have merely noted the assumed deterrent effect of random testing in their discussions concerning the adoption of random testing, citing the DOD's drug testing programs as an example (55 FR 3698, 1990).

In reviewing federal agencies' drug testing programs, the General Accounting Office (GAO, 1991) reports that the random testing rate varies from 4% to 200%. For instance, agencies with random testing rates of 5% or less include the U.S. Department of Commerce, the U.S. Mint, the Immigration and Naturalization Service (INS), the Federal Bureau of Prisons, the Federal Bureau of Investigation (FBI), and the National Labor Relations Board (NLRB). Agencies with random testing rates of 100% or more include the U.S. Navy, the Department of Education, the General Services Administration (GSA), the U.S. Nuclear Regulatory Commission (NRC), and the National Endowment for the Humanities. Some agencies vary the rate of testing. For example, according to the GAO, the Selective Service System varies their random testing rate from 28% to 100% of the sample population. Random testing also varies according to each agency's unique policies and practices. This significant variation indicates a lack of consensus regarding the optimum random testing rate.

The FRA study of the effects of reduced random testing rates on drug use detection and deterrence represents the first research directly addressing the consequences of reduced random test rates. This study will involve approximately 80,000 railroad employees (8,000 to 12,000 at each of 8 rail lines involved in the study), comprising roughly 90% of the railroad employee population. The results of this research will provide useful information regarding random testing rates, although differences between the railroad industry and the nuclear power industry suggest taking care in interpreting the FRA findings. The railroad industry has fewer units (i.e., there are fewer carriers than there are utilities), and more employees per unit, than the nuclear power industry. The greater number of nuclear power plants and the flexibility

provided in Part 26 regarding cut-off levels, sanctions, etc., suggests a potential for greater variability between programs within the nuclear power industry and in comparison with rail carriers. A rail line's employees are located across the country, and thus are subject to a range of local drug use patterns and contexts. By contrast, the employees of a nuclear power plant tend to be located within a single geographic region, with one prevailing set of local drug use patterns. Finally, the recently reported rate of detected substance abuse in the railroad industry is triple that in the nuclear power industry (approximately 1% as against .3% for licensee employees). Hence the FRA firings, when they are made available, should be cautiously applied to the nuclear power industry.

CONCLUSIONS

Deterrence is believed to be a function of the perceived risk of being detected, the severity of the sanction, and the swiftness with which it is applied compared with the gratification derived from the illicit behavior. A host of factors affect deterrence of drug use in the workforce, including national drug use patterns; attitudes concerning health, safety, and employment risks of drug abuse; workforce demographic factors; and the effectiveness of unique fitness-for-duty program elements such as pre-employment, random, and for-cause testing. Several conclusions may be drawn from the review of the available literature:

- (1) The deterrent effect of random drug and alcohol testing programs may not be sensitive to incremental adjustments in random test rates. While random testing remains critical in deterring drug abuse, it is only one of the forces acting to deter drug use. Other important factors include the elements of a broadbrush approach, personality and environmental factors, organizational factors, and drug-specific factors.
- (2) Assuming equal testing rates and procedures, there will be a greater deterrent effect when the risks of drug abuse--including the probability of detection--are well understood than when they are not.
- (3) Some users will remain undeterred. Based on the findings of the military, and of research on drunk drivers, some part of the population continues to abuse drugs or alcohol even when detection and sanctions are highly certain. Hence, regardless of the random testing rate, some users may not cease their drug use under any condition. Thus, other program elements, such as behavioral observation, for-cause testing and employee assistance programs, are important to provide additional assurances to detect and remove chronic drug abusers from the workforce. A higher random testing rate would more rapidly detect these undeterred users (see Appendix to NUREG/CR-5784). If the deterrent

effect of a 50% random testing rate were assumed to be the same as at a 100% rate, about half (250) of the approximately 500 cases of drug and alcohol use detected through random testing per year in the nuclear power industry would go undetected.

REFERENCES

- 56 FR 22905. May 17, 1991. "Proposed Test Program to Evaluate Random Drug Testing Rate." *Federal Register*.
- 54 FR 24468. June 7, 1989. "Nuclear Regulatory Commission. Fitness for Duty Programs: Final Rule and Statement of Policy." *Federal Register*.
- 54 FR 51842. December 18, 1989. "Control of Drug Use in Natural Gas, Liquefied Natural Gas, and Hazardous Liquid Pipeline Operations." *Federal Register*.
- 55 FR 3698. February 2, 1990. "Anti-Drug Program for Personnel Engaged in Specific Aviation, Activities." *Federal Register*.
- American Management Association [AMA] (1991). "1991 AMA Survey: Workplace Drug Testing and Drug Abuse Policies," New York: Author.
- Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1990). "Explaining the Recent Decline in Cocaine Use Among Young Adults: Further Evidence That Perceived Risks and Disapproval Lead to Reduced Drug Use," *Journal of Health and Social Behavior*, 31(June): 173-184.
- Barnes, V., Fleming, I., Grant, T., Hauth, J., Hendrickson, J., Kono, B., Moore, C., Olson, J., Saari, L., Toquam, J., Wieringa, D., Yost, P., Hendrickson, P., Moon, D., & Scott, W. (1988). "Fitness for Duty in the Nuclear Power Industry: A Review of Technical Issues (NUREG/CR-5227)." Washington, DC: Nuclear Regulatory Commission.
- Beshai, N. (1984). "California DUI Law: One Year Implementation," *Abstracts and Reviews in Alcohol and Driving*, 5:3, 11-20.
- Bray, R. M., Marsden, M. E., & Peterson, M. R. (1991). "Standardized Comparisons of Use of Alcohol, Drugs, and Cigarettes Among Military Personnel and Civilians," *American Journal of Public Health*, 81:7, 865-869.

Bray, R. M., Marsden, M. E., & Rachal, J. V. (1990). "Drug and Alcohol Use in the Military Workplace: Findings from the 1988 Worldwide Survey." In: S. W. Gust, J. M. Walsh, L. B. Thomas, and D. J. Crouch, (Eds.), *Drugs in the Workplace: Research and Evaluation Data, Volume II*. NIDA Research Monograph No. 100. Rockville, MD: National Institute on Drug Abuse, 25-43.

Bray, R. M., Marsden, M. E., Guess, L. L., Wheless, S. C., Iannacchione, V. G., & Keesling, S. R. (December 1988). *1988 Worldwide Survey of Substance Abuse and Health Behaviors Among Military Personnel* (RTI/4000/06-02FR), Research Triangle Institute: Research Triangle, NC.

Cohen, S. (November 1986). "The Military Worldwide Surveys: Deterrent Effects of Urine Testing on Drug Use," *Drug Abuse & Alcoholism Newsletter*, Vista Hill Foundation, 15:9.

Coombs, R. H., & Ryan, F. J. (1990). "Drug Testing Effectiveness in Identifying and Preventing Drug Use," *American Journal of Drug and Alcohol Abuse*, 16:3 & 4, 173-184.

Crant, J. M., & Bateman, T. S. (1990). "An Experimental Test of the Impact of Drug-Testing Programs on Potential Job Applicants' Attitudes and Intentions," *Journal of Applied Psychology*, 75:2, 1-5.

Dunbar, J. A., Penttila, A., & Pikkarainen, J. (1987). "Random Breath Tests in Finland Have Halved Drinking and Driving Rate," *British Medical Journal*, 295:101-103.

Durbin, N., Fleming, T., Murphy, S., Macaulay, J., Westra, C., Olson, J., & Christensen, J. (1991). *Fitness for Duty in the Nuclear Power Industry: Annual Summary of Program Performance Reports CY1990 (NUREG/CR-5758)*." Washington, DC: Nuclear Regulatory Commission.

Durbin, N., Moore, C., Grant, T., Fleming, T., Hunt, P., Martin, R., Murphy, S., Hauth, J., Wilson, R., Bittner, A., Bramwell, A., Macaulay, J., Olson, J., Terrill, E., & Toquam, J. (1991). *Fitness for Duty in the Nuclear Power Industry: A Review of the First Year of Program Performance and an Update of the Technical Issues (NUREG/CR-5784)*." Washington, DC: Nuclear Regulatory Commission.

GAO (1991). *Employee Drug Testing: Status of Federal Agencies' Programs: Report to the Chairman, Committee on Governmental Affairs, U.S. Senate*, (May 1991). Washington, DC: U.S. General Accounting Office, GAO/GGD-91-70, 14-19.

Googins, B., & Kurtz, N. R. (1980). "Factors Inhibiting Supervisory Referrals to Occupational Alcoholism Intervention Programs," *Journal of Studies on Alcohol*, 41:11, 1196-1208.

Hoffman, E., & Roman, P.M. (1984). "Effects of Supervisory Style and Experientially Based Frames of Reference on Organizational Alcoholism Programs," *Journal of Studies on Alcohol*, 45:3, 260-267.

Hurst, P. M. (1985). "Blood Alcohol Limits and Deterrence: Is There a Rational Basis for Choice?," *Alcohol, Drugs, and Driving*, 1:1 & 2, 122-133.

Institute for a Drug-Free Workplace (1991). "What Employees Think About Drug Abuse," *Special Report*. Washington, DC: (Conference Handout).

LeRoy, M. H. (1991). "Discriminating Characteristics of Union Members' Attitudes Toward Drug Testing in the Workplace," *Journal of Labor Research*, XII:4, 453-466.

LeRoy, M. H. (1990). "Drug Testing in the Public Sector: Union Member Attitudes," *Journal of Collective Negotiations*. 19:3, 165-173.

Morbidity and Mortality Weekly Report [MMWR] (1989). "Prevalence of Drug Use among Applicants for Military Service - United States, June-December 1988," 38:3, 580-583.

Moore, C., Barnes, V., Hauth, J., Wilson, R., Fawcett-Long, J., Toquam, J., Baker, K., Wieringa, D., Olson, J., & Christensen, J. (1989). *"Fitness for Duty in the Nuclear Power Industry: A Review of Technical Issues (NUREG/CR-5227; PNL-6652)"*. Washington, DC: Nuclear Regulatory Commission.

Murphy, K. R., Thornton III, G. C., & Reynolds, D. H. (1990). College Students' Attitudes Toward Employee Drug Testing Programs," *Personnel Psychology*, 43:615-631.

Osborn, C. E., & Sokolov, J. J. (1990). "Drug Use Trends in a Nuclear Power Facility: Data From a Random Screening Program." In: S. W. Gust, J. M. Walsh, L. B. Thomas, and D. J. Crouch, (Eds.), *Drugs in the Workplace: Research and Evaluation Data, Volume II*. NIDA Research Monograph No. 100. Rockville, MD: National Institute on Drug Abuse, 25-43.

Osborn, C. E., & Sokolov, J. J. (1989). "Drug Use Trends in a Nuclear Power Company: Cumulative Data From an Ongoing Testing Program." In: S. W. Gust, and J. M. Walsh (Eds.), *Drugs in the Workplace: Research and Evaluation Data*. NIDA Research Monograph No. 91. Rockville, MD: National Institute on Drug Abuse, 69-80.

Peck, R. C., Sadler D. D., & Perrine, M. W. (1985). "The Comparative Effectiveness of Alcohol Rehabilitation and Licensing Control Actions for Drunk Driving Offenders: A Review of Literature," *Alcohol, Drugs, and Driving*, 1:4, 15-39.

Slovic, P., Lichenstein, S., & Fishhoff, B. (1988). "Decision Making." In: R.C. Atkinson et al. (Eds.), *Stevens' Handbook of Experimental Psychology (2nd Ed.)*, Vol. 2. New York, NY: John Wiley & Sons.

Stoloff, P. H. (1985). *The Effectiveness of Urinalysis as a Deterrent to Drug Use*, p. 11, Washington, DC: Department of the Navy.

Taggart, R. W. (1989). "Results of the Drug Testing Program at Southern Pacific Railroad." In: S. W. Gust, and J. M. Walsh (Eds.), *Drugs in the Workplace: Research and Evaluation Data*. NIDA Research Monograph No. 91. Rockville, MD: National Institute on Drug Abuse, 97-108.

U.S. Department of Education. (1990). "Survey Notes Continuing Decline In Drug Use By High School Seniors," *Schools Without Drugs: The Challenge*, 4:3.

Voas, R. B. (1986). "Evaluation of Jail as a Penalty for Drunk Driving," *Alcohol, Drugs, and Driving*, 1:4, 15-39.

Waldo, G. P., & Chiricos, T. G. (1972). "Perceived Penal Sanction and Self-Reported Criminality: A Neglected Approach to Deterrence Research," *Social Problems*, 19:4, 522-540.

APPENDIX A

LITERATURE REVIEW METHODOLOGY

The literature review consisted of gathering and abstracting published information related to random testing and deterrence. Project staff surveyed literature from a number of fields pertinent to random testing and deterrence, including sociology, psychology, and drug and alcohol testing programs (survey data and studies of program performance). The objective of the search was to identify studies pertinent to deterrence theory pertaining to drug abuse and workplace drug testing programs. The search was designed to provide as much information about issues related to drug abuse, random testing, and deterrence, and to inform the NRC about issues where the research is incomplete or has not been addressed.

In addition to manual searches of libraries and journals, on-line searches of several electronic databases were conducted. These searches included the following: (1) a free text search of the Federal Register for entries keyed to "random test" and "drug, alcohol, or substance abuse"; (2) a search designed to find references pertaining to random testing and deterrence in the NTIS, ABI/INFORM, MEDLINE, and Psychinfo databases; (3) a search of the Battelle fitness-for-duty literature database; and (4) a search of the University of Washington Alcohol and Drug Abuse Institute's literature database. Several persons knowledgeable about workplace drug abuse programs were contacted to identify additional sources of published information: Dr. Peter Stoloff, DOD; Dr. Robert Bray, Research Triangle Institute; Cmdr. Ralph Bally, DOD; Dr. Joseph Montgomery, Pacific Northwest Laboratory; Mr. James Schultz, Federal Railroad Administration.

ENCLOSURE 2

MATRIX,

"Random Testing Rates"

RANDOM TESTING

	<u>1990</u> # Tests/# Positive	<u>1991</u> # Tests/# Positive	<u>2-Year Totals</u> # Tests/# Positive	<u>2-Year</u> <u>Positive Rate</u>
Long-Term Contractors/Vendors	8,910/044	7,500/023	16,410/067	0.41%
Short-Term Contractors/Vendors	39,596/229	45,277/267	84,873/496	0.58%
All Contractors/Vendors	48,506/273	52,777/290	101,283/563	0.56%*
Licensee Employees	100,237/277	101,041/220	201,278/497	0.25%**

*The range for contractor employees during CY 1991 was between 0% and 1.53%,
with 7 sites having rates greater than 1.0%.

**The range for licensee employees during CY 1991 was between 0% and 0.87%,
with 5 sites having rates higher than 0.5%.