

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, DC 20555-0001

February 6, 2003

NRC INFORMATION NOTICE 2003-04: SUMMARY OF FITNESS-FOR-DUTY PROGRAM
PERFORMANCE REPORTS FOR CALENDAR
YEAR 2000

Addressees

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to report on lessons learned by licensees from their fitness-for-duty (FFD) program performance reports for calendar year 2000. It is expected that recipients will review the information for applicability to their facilities and consider, as appropriate, corrective actions to improve the performance of their FFD programs in the future. However, this IN should not be construed as representing NRC requirements, and therefore no specific actions or written responses are required.

Description of Circumstances

Since the fitness-for-duty rule (10 CFR Part 26) was published in 1989 and amended in 1992, licensees have submitted FFD program performance reports to the NRC, as required by 10 CFR 26.71(d). In the past, the NRC summarized and analyzed the data submitted by the licensees and published an annual volume, NUREG/CR-5758, "Fitness for Duty in the Nuclear Power Industry—Annual Summary of Program Performance Reports." In 2001, the NRC issued IN 2001-02 to convey this information for the years 1998 and 1999. This IN provides similar information for 2000. Statistics are provided in Attachment 1.

Discussion

Lessons learned, management initiatives and problems, and associated corrective actions reported by licensees in 2000 are summarized below.

(1) Certified Laboratories

Several licensees continue to experience problems with laboratory performance. For example, the determination of blind performance specimens caused test discrepancies at two different laboratories.

ML030350473

- A licensee reported that one donor specimen tested at the laboratory confirmed positive. The Laboratory Forensic Testing Director was provided with the onsite screening information on this specimen. It was reported as a negative test since it was just under the positive threshold. The Director concluded the overall accuracy of the onsite specimen program is acceptable under current instrument accuracy standards. The onsite immunoassay test instrument was calibrated according to the manufacturer's recommendations. The negative test result may have been due to variability of reagents and/or differences in onsite and laboratory test equipment or procedures. Statistically, specimens that are at the threshold level may screen both above and below the cutoff if testing is repeated. In this instance, the Medical Review Officer (MRO) determined the specimen donor to be in violation of the FFD program and unescorted access was denied.
- One licensee shipped a blind performance sample to the U.S. Department of Health and Human Services (HHS)-certified laboratory, and the sample tested negative for tetrahydrocannabinol (THC). This sample should have tested positive. The laboratory rechecked the process and found no discrepancies. Further testing verified the specimen contained THC. The sample in the FFD office was then shipped to another HHS-certified laboratory for testing and the results turned up negative. On further investigation, it was determined that the blind specimen, which was within 2 weeks of its expiration date, had deteriorated below the confirmatory level before being tested. The condition was documented and corrective action taken.
- A licensee reported that a certified laboratory was unable to test an onsite dilute specimen because the specimen label was not legible. The licensee collected a second specimen, and the results turned up negative. The laboratory rejected the specimen because the tamper-resistant seal was not on the container. The nurse failed to follow proper chain of custody procedures when collecting the specimen after the previously diluted specimen. A third specimen was collected, and the results were negative. The laboratory was unable to test a blood specimen that was requested after a positive alcohol test. The donor identification on the specimen container did not match the chain of custody form. The MRO determined that collection of another specimen was not necessary, and the positive alcohol finding stood. The licensee noted that blind performance testing was conducted at a rate of 10 percent. Ninety-two specimens were submitted and all test results were correct.
- One licensee reported at least 85 percent of the specimens which were determined to be presumptively positive as a result of preliminary onsite screening for marijuana and cocaine were also reported as positive by the HHS-certified laboratory.
- One licensee reported that meetings are conducted with laboratory, collection site, MRO, Employee Assistance Program (EAP), and psychological assessment staff, and this has proven to assure consistent and effective implementation of the FFD program.

- One licensee reported that a total of 450 blind proficiency specimens were processed for the reporting period, calendar year 2000, and there were no false negatives and no false positives.
- One licensee reported that blind specimens submitted to the HHS-certified laboratory generally yielded the results expected.
- One licensee reported a potential performance test discrepancy in that two blind performance specimens that were spiked with amphetamine/methamphetamine were reported as negative by the HHS-certified laboratory. However, during further investigation, it was discovered that the blind performance specimens had unexpectedly deteriorated.
- One licensee reported that quality assurance (QA) personnel audit portions of the FFD program as part of the Continuous Assessment Process. Based on the audits, the following four deficiencies were identified: HHS laboratory personnel qualifications; HHS laboratory opiate testing procedures; collection procedures when FFD personnel are tested; and the testing frequency of personnel in a followup testing program. Immediate corrective actions were taken.
- One licensee reported that the HHS-certified contract laboratory used to analyze testing samples inadvertently raised the cutoff level for opiate metabolites. The results from the tested samples were negative at the NRC cutoff levels. An investigation performed in accordance with the Corrective Action Program revealed that the laboratory had an inadequate program for performing, monitoring, and evaluating changes made to a customer's account. Corrective actions to prevent recurrence taken by the contract laboratory included developing and implementing a formalized account change process that verifies and validates such changes.
- One licensee reported several problems with the handling and testing of specimens; pre-access test leaked, specimens shipped by air were lost for 12 days, and one specimen tested positive for adulterants. Appropriate corrective action was taken in these cases, which shows that special care must be taken in collecting specimens before transporting them to the HHS-certified laboratory.
- One licensee reported that an individual from an HHS-certified laboratory deviated from established testing procedures, resulting in a random specimen being discarded that was needed pending legal resolution of an administrative action. Personnel associated with the laboratory and administration of the FFD program were made aware of this incident, and further actions to prevent recurrence were established. The test was considered as being incomplete and was readministered as soon as possible on another random test day.

(2) Random Testing

Several licensees reported minor problems relative to the random drug and alcohol selection process.

- One licensee reported that a contractor employee had a seizure during alcohol testing. It was determined at the local hospital that the seizure was related to alcohol withdrawal. The MRO requested a complete physical, including a liver enzyme test. The test results were negative. The individual is enrolled in a medical treatment rehabilitation program.
- One licensee reported that management performed a comparison between the number of tests given and the number of positive results obtained during the performance period for calendar 2000. The positive test results were up 25% for the same period. Part of this increase was attributed to the employee screening efforts of the cleaning contractor. The increase in the number of pre-access and random tests performed during the same performance period was a result of the steam generator replacement outage.
- One licensee reported several problems with the random drug and alcohol selection process due to an improperly reset computer code. These errors have been corrected through revising the Specimen Collection Protocol for Drug and Alcohol Screening which was implemented. At one facility, the licensee enhanced the Repetitive Task Process by which the integrity of the random pool is verified on a quarterly basis. This process ensures that all employees are eligible for random selection.

(3) Policies and Procedures

Several licensees reported initiatives to improve their FFD program policies and procedures.

- One licensee reported that no adulterated samples were found, though four abnormal integrity checks were noted. All tests were negative on the repeat testing of these samples taken.
- One licensee reported distributing several site communications during a six month period which addressed various aspects of the Continual Behavioral Observation Program in an effort to strengthen site personnel's knowledge of the program requirements. A reference card was distributed to site supervision addressing Call-In situations and Continual Behavior Observation Techniques. Additionally, a Drug Education Guide was distributed to site supervisors providing information on; physical symptoms, dangers, and slang terms for various illegal drugs.

- One licensee stated that during the reporting period, the contractor population was higher than usual due to a steam generator replacement. It was noted that three cases were reported of employees using a family member's medication, resulting in positive test results. A QA audit identified the deviation from FFD requirements where the MRO did not recognize an incorrect screening cutoff level. This was later determined to be an isolated problem that did not impact on any presumptive tests. This problem was reported to the NRC. The licensee also reported two drug and alcohol tests were ruled null and void by the MRO for specimens received at the offsite laboratory. One had a damaged container, and one had a broken seal. However, subsequent tests produced negative results.
- One licensee reported that one site implemented the use of ChemStix4 strips to test for elevated nitrite levels with subsequent confirmation using Mask 87 strips. If a positive reaction is obtained, the results are confirmed with a Mask 87 strip. The licensee reported that this practice was found to be time saving and cost effective, and helped ensure less embarrassment on an individual's part by decreasing the false positive nitrite results.
- One licensee reported the lower cutoff level for marijuana resulted in no additional confirmed positive tests. There was one discrepant test result during the reporting period from the backup laboratory. A false negative was reported for amphetamines on a blind performance test specimen. An investigation was initiated and determined that a reagent product was being used (EMIT II Plus) by the laboratory for the testing of amphetamines. As part of the initial validation of these new reagents, the reagents were capable of distinguishing positive specimens from negative specimens for both methamphetamine and amphetamine at the cutoff concentration. When a new lot of these reagents was received, it was validated only for methamphetamine. The investigation concluded that although there was no problem with the sensitivity to methamphetamine, there was a significant change in the response to amphetamine. As a corrective action the laboratory has returned to using the reagents that have previously proven to be satisfactorily responsive to both drugs.
- One licensee reported that two incidents of urine adulteration were identified. The licensee continues to research and implement the most effective method to detect FFD testing subversion. During an audit, two program deficiencies were identified. One was inadequate toilet bluing within the screening trailer. It was also noted that one refrigerator used to store specimens did not have a lock on the door. Both deficiencies were immediately corrected.
- One licensee reported that a sealed package containing leafy material was found inside the protected area on the roadway. It was sent to the Division of Forensic Sciences in the Georgia Bureau of Investigation (GBI). The GBI reported that the leafy material tested positive for marijuana. Even though the substance was not in the direct possession of an individual upon discovery, the NRC was notified because someone had to have possessed the material to get it in the protected area. Management had those individuals in the protected area during the timeframe of the discovery incident placed in a smaller but separate pool for random drug screening.

- One licensee reported that it was initiating a number of self-assessment reviews on a variety of topics, including cutoff levels for opiates, training of supervisors on handheld intoxilizers, and quality control (QC) testing. The results of these reviews will be used to make revisions to evaluate and improve FFD programs.
- One licensee reported that its onsite screening uses a process that requires all “nonnegative” tests be sent to a contracted HHS-certified laboratory for both screening and confirmatory testing. To monitor the accuracy and increase the integrity of the laboratory, this utility has participated in proficiency testing provided by the College of American Pathologists (CAP).
- One licensee distributed information to the Industrial Safety Action Team regarding the dangers of over-the-counter antihistamines. The licensee also conducted an analysis of the FFD program performance data for the first half of 2000 and revised its FFD procedures to incorporate the recommendations.
- One licensee mailed a pamphlet describing the available Employee Assistance Program (EAP) to the homes of all employees. The purpose of this mailing was to remind employees of the services offered to employees and eligible family members. An EAP training session was initiated for all supervisors and managers to help them be more comfortable referring employees to the EAP and use this program as a possible resolution for future problems that might arise. Classes have been and are still being conducted and, to date, the feedback has been positive.
- One licensee reported that during the performance period, random sweeps were made by drug sniffing canine teams and plant personnel were interviewed to determine whether illicit drugs and alcohol were being used at the facilities. In this regard, QA personnel conducted audits using the following aspects of the FFD program: chemical testing, sample collection, collection site readiness, breath alcohol testing, onsite screening of specimens, and presumptive positive specimens. The only problem identified during this period was the improper maintenance of an FFD procedures manual. The problem has been corrected.
- One licensee reported that based upon the positive test results, marijuana is the drug of preference, with cocaine second.

(4) Program and System Management

In general, most licensees continue to report improvements in their overall FFD program management.

- A licensee reported that the annual FFD audit identified an aggressive self-assessment schedule as one of the main contributors to the program’s success. During the audit, a review of the assessment reports revealed that several elements contributed to the success. They are: (1) attention to evaluating performance against established requirements; (2) identifying deficiencies; (3) corrective actions taken; (4) a sound followup process; and (5) awareness and self-assessment against industry experience data.

- One licensee's FFD program was revised to address actions to be taken relative to legal hemp products. Although ingestion of hemp/hemp oil food products is not prohibited by company policy, THC test results above the cutoff limits will be reported by the MRO as confirmed positive for THC, and appropriate sanctions will be imposed as provided by regulation and the FFD Program.
- A licensee's canine program continues to remind plant personnel of the licensee's commitment to maintain a drug-free work environment. The canine unit provides antidrug presentations to local schools and other community organizations. The canine unit is also made available to local law enforcement agencies upon request.

The NRC expects addressees to evaluate the above information for applicability to licensed activities. However, this IN does not require any specific action or written response. If you have any questions about this notice, please contact one of the technical contacts listed below or the appropriate project manager in the NRC's Office of Nuclear Reactor Regulation (NRR).

/RA/

William D. Beckner, Program Director
Operating Reactor Improvements Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Technical Contacts: Garmon West, Jr., Ph.D., NSIR
301-415-0211
E-mail: fitnessforduty@nrc.gov

Robert Caldwell, NRR
301-415-1243
E-mail: rkc1@nrc.gov

Attachments: 1. Fitness-for-Duty Statistics
2. List of Recently Issued NRC Information Notices

Table 1 - 2000 Test Results For Each Test Category

Test Category	Number of Tests	Positive Tests	Percent Positive
Pre-Access	68,333	965	1.41%
Random	51,955	204	0.39%
For-Cause	883	138	15.66%
Followup	2,861	49	1.71%
Other	1,681	41	2.44%
Total *	125,713	1,397	1.11%
Total without Other category	124,032	1,356	1.09%

* These totals were calculated using the Other test category. This category includes results from the periodic testing done by some reporting units during annual physicals or similar periodic activities. Although some reporting units specified the nature of the Other tests (e.g., return to work), most reporting units did not give this information.

Table 2 - 2000 Test Results For Each Test Category And Work Category

Test Category	Licensee Employees	Long-Term Contractors	Short-Term Contractors	Total
Pre-Access				
Number Tested	7,613	2,917	57,803	68,333
Number Positive	51	60	854	965
Percent Positive	0.67%	2.06%	1.48%	1.41%
Random				
Number Tested	36,784	2,105	13,066	51,955
Number Positive	116	5	83	204
Percent Positive	0.32%	0.24%	0.64%	0.39%
For-Cause				
Number Tested	355	96	432	883
Number Positive	21	12	105	138
Percent Positive	5.92%	12.50%	24.24%	15.66%
Followup				
Number Tested	1,633	38	1,190	2,861
Number Positive	18	1	30	49
Percent Positive	1.10%	2.63%	2.52%	1.71%
Other				
Number Tested	586	284	811	1,681
Number Positive	5	2	34	41
Percent Positive	0.85%	0.70%	4.19%	2.44%
Total				
Number Tested	46,971	5,440	73,302	125,713
Number Positive	211	80	1,106	1,397
Percent Positive	0.45%	1.47%	1.51%	1.11%
Total without Other Category				
Number Tested	46,385	5,156	72,491	124,032
Number Positive	206	78	1,072	1,356
Percent Positive	0.44%	1.51%	1.48%	1.09%

Table 3 - 2000 Test Results By Test Category

Test Category	First 6 Months	Second 6 Months	Year
Pre-Access			
Number Tested	32,896	34,437	68,633
Number Positive	402	563	965
Percent Positive	1.22%	1.59%	1.41%
Random			
Number Tested	26,669	25,286	51,955
Number Positive	131	73	204
Percent Positive	0.49%	0.29%	0.39%
For-Cause <i>Observed Behavior</i>			
Number Tested	353	256	609
Number Positive	68	64	132
Percent Positive	19.26%	25.00%	21.67%
<i>Post-Accident</i>			
Number Tested	156	118	274
Number Positive	2	4	6
Percent Positive	1.28%	3.39%	2.19%
Follow-Up			
Number Tested	1,499	1,362	2,861
Number Positive	23	24	49
Percent Positive	1.67%	1.76%	1.71%
Other			
Number Tested	888	793	1,681
Number Positive	23	18	41
Percent Positive	2.59%	2.27%	2.44%
Total			
Number Tested	62,461	63,252	125,713
Number Positive	651	746	1,397
Percent Positive	1.04%	1.18%	1.11%
Total w/o Other category			
Number Tested	61,573	62,459	124,032
Number Positive	628	728	1,356
Percent Positive	1.02%	1.17%	1.09%

Table 4 - 2000 Test Results For Licensee Employees And Contractor Personnel

Test Category	Licensee Employees			Long-Term Contractors			Short-Term Contractors		
	First 6 Months	Second 6 Months	Year	First 6 Months	Second 6 Months	Year	First 6 Months	Second 6 Months	Year
Pre-Access									
Number Tested	4,235	3,378	7,613	2,561	356	2,917	26,100	31,703	57,803
Number Positive	30	21	51	57	3	60	315	539	854
Percent Positive	0.71%	0.62%	0.67%	2.23%	0.84%	2.06%	1.215	1.70%	1.48%
Random									
Number Tested	18,790	17,994	36,784	1,412	693	2,105	6,467	6,599	13,066
Number Positive	94	22	116	3	2	5	34	49	83
Percent Positive	0.50%	0.12%	0.32%	0.21%	0.29%	0.24%	0.53%	0.74%	0.64%
For-Cause Observed Behavior									
Number Tested	103	102	205	84	5	89	166	149	115
Number Positive	11	10	21	12	0	12	45	54	99
Percent Positive	10.68%	9.8%	10.24%	14.29%	0.00%	13.48%	27.11%	36.24%	31.43%
Post-Accident									
Number Tested	72	80	152	4	3	7	80	35	115
Number Positive	0	0	0	0	0	0	2	4	6
Percent Positive	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.5%	11.43%	5.22%
Followup									
Number Tested	849	784	1,633	29	9	38	621	569	1,190
Number Positive	13	5	18	1	0	1	11	19	30
Percent Positive	1.53%	0.64%	1.10%	3.45%	0.00%	0.70%	5.07%	3.51%	4.19%
Other									
Number Tested	354	232	586	179	105	284	355	456	811
Number Positive	3	2	5	2	0	2	18	16	34
Percent Positive	0.85%	0.86%	0.85%	1.12%	0.00%	.70%	5.07%	3.51%	4.19%
Total									
Number Tested	24,403	22,570	46,973	4,269	1,171	5,440	33,789	39,511	73,300
Number Positive	151	60	211	75	5	80	425	681	1,106
Percent Positive	0.62%	0.27%	0.45%	1.76%	0.43%	1.47%	1.26%	1.72%	1.51%
Total w/o Other category									
Number Tested	24,049	22,338	46,387	4,090	1,066	5,156	33,434	39,055	72,489
Number Positive	148	58	206	73	5	78	407	665	1,072
Percent Positive	0.62%	0.26%	0.44%	1.78%	0.47%	1.51%	1.22%	1.70%	1.48%

Table 5 - 2000 Number Of Confirmed Positives By Substance

Type of Substance	First 6 Months		Second 6 Months		Total	
	Number	Percent	Number	Percent	Number	Percent
Marijuana	311	58.24%	309	48.74%	620	53.08%
Cocaine	100	18.73%	151	23.82%	251	21.49%
Opiates	11	2.06%	21	3.31%	32	2.74%
Amphetamines	18	3.37%	32	5.05%	50	4.28%
Phencyclidine	0	0.00%	4	0.63%	4	0.34%
Alcohol	94	17.60%	117	18.45%	211	18.07%
Total	534		634		1,168	

Table 6 - 2000 Confirmed Positive Test Results By Substance And Work Category

Type of Substance	Licensee Employees		Contractors (Long-Term/Short-Term)	
	Number	Percent	Number	Percent
Marijuana	56	43.08%	564	54.28%
Cocaine	23	17.69%	228	21.94%
Opiates	3	2.31%	29	2.79%
Amphetamines	4	3.08%	47	4.52%
Phencyclidine	0	0.00%	4	0.38%
Alcohol	44	33.85%	167	16.07%
Total	130		1,039	

**Table 7 - 2000 Confirmed Positives Test Results By Substance
For Each Worker Category
(January through December 2000)**

Type of Substance	Licensee Employees		Contractors (Long-Term/Short-Term)	
	Number	Percent	Number	Percent
Marijuana	78	43.58%	528	54.21%
Cocaine	41	21.91%	228	23.41%
Opiates	3	1.68%	16	1.64%
Amphetamines	6	3.35%	40	4.11%
Phencyclidine	0	0.00%	1	0.10%
Alcohol	51	28.49%	161	16.53%
Total	179		974	

Table 8 - Significant Fitness-For-Duty Events (1990-2000)

Type of Event	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
Reactor Operators	19	16	18	8	7	8	8	9	5	5	5	108
Licensee Supervisors	26	16	22	25	11	16	19	16	10	2	11	174
Contract Supervisors	12	24	28	16	11	10	8	10	10	12	8	149
FFD Program Personnel	1	5	0	0	1	0	2	0	3	2	0	14
Substances Found	6	8	6	2	0	5	5	4	0	2	3	41
Total	64	69	74	51	30	39	42	39	28	23	27	486

Table 9 - Trends in testing by test type (1990-2000)

Type of Test	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Pre-Access												
Number Tested	122,491	104,508	104,842	91,471	80,217	79,305	81,041	84,320	69,146	69,139	68,333	9
Number Positive	1,548	983	1,110	952	977	1,122	1,132	1,096	822	934	965	1
Percent Positive	1.26%	0.94%	1.06%	1.04%	1.22%	1.41%	1.40%	1.30%	1.19%	1.35%	1.41%	1
Random												
Number Tested	148,743	153,818	156,730	146,605	78,391	66,791	62,307	60,829	56,969	54,457	51,955	1
Number Positive	550	510	461	341	223	180	202	172	157	140	204	3
Percent Positive	0.37%	0.33%	0.29%	0.23%	0.28%	0.27%	0.32%	0.28%	0.28%	0.26%	0.39%	0
For-Cause												
Number Tested	732	727	696	751	758	763	848	722	720	736	883	8
Number Positive	214	167	178	163	122	139	138	149	100	120	138	1
Percent Positive	29.23%	22.97%	25.57%	21.70%	16.09%	18.22%	16.27%	20.64%	13.89%	16.30%	15.67%	1
Followup												
Number Tested	2,633	3,544	4,283	4,139	3,875	3,262	3,262	3,296	2,863	3,008	2,861	3
Number Positive	65	62	69	56	50	35	40	31	43	30	49	5
Percent Positive	2.47%	1.75%	1.61%	1.35%	1.29%	1.07%	1.23%	0.94%	1.50%	1.00%	1.71%	1
TOTAL*												
Number Tested	274,599	262,597	266,551	242,966	163,241	150,121	147,458	149,167	129,698	127,340	124,032	2
Number Positive	2,377	1,722	1,818	1,512	1,372	1,476	1,512	1,448	1,122	1,224	1,356	1
Percent Positive	0.87%	0.66%	0.68%	0.62%	0.84%	0.98%	1.03%	0.97%	0.87%	0.96%	1.09%	0

* Does not include test results from the "Other" test category.

Table 10 - Trends in substances identified (1990-2000)

Substance	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Marijuana	1,153	746	953	781	739	819	868	842	606	672	620
Cocaine	706	549	470	369	344	374	352	336	269	273	251
Alcohol	452	401	427	357	251	265	281	262	212	230	211
Amphetamines	69	31	31	51	54	61	53	49	46	40	50
Opiates	45	24	8	13	11	17	14	39	19	16	32
Phencyclidine	8	11	4	5	1	7	2	0	1	2	1
Total*	2,433	1,762	1,893	11,576	1,400	1,543	1,570	1,528	1,153	1,233	1,168

* These totals do not equal the total number of positives for each year because some positives were for multiple substances and for other substances than those listed above.

**Table 11 - Trends In Positive Test Rates For Workers
With Unescorted Access (1990-2000)**

	Positive Test Rate
1990	0.54%
1991	0.47%
1992	0.44%
1993	0.37%
1994	0.48%
1995	0.50%
1996	0.57%
1997	0.54%
1998	0.50%
1999	0.50%
2000	0.70%