

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, D.C. 20555-0001

March 28, 2001

NRC INFORMATION NOTICE 2001-02: SUMMARY OF FITNESS-FOR-DUTY PROGRAM  
PERFORMANCE REPORTS FOR CALENDAR  
YEARS 1998 AND 1999

Addressees

All holders of operating licenses for nuclear power reactors, and licensees authorized to possess or use formula quantities of strategic special nuclear material (SSNM) or to transport formula quantities of SSNM.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to provide lessons learned and summarize the data submitted by licensees to the NRC in their fitness-for-duty (FFD) program performance reports for calendar years 1998 and 1999. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate. However, suggestions contained in this information notice are not NRC requirements, therefore no specific actions or written response is required.

Description of Circumstances

Since the fitness-for-duty rule (10 CFR Part 26) was published, licensees have submitted 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 1998, the NRC issued IN 98-39 to convey this information for the years 1996 and 1997. This IN provides similar information for 1998 and 1999 FFD statistics are provided in Attachment 1.

Discussion

Lessons learned, management initiatives and problems, and associated corrective actions reported by licensees in 1998 and 1999 are summarized below.

(1) Certified Laboratories

Some licensees continue to experience problems with laboratory performance or have identified potential weaknesses. Licensees also continue to investigate and review adulterant detection strategies to be used by laboratories.

ML010250419

- A licensee assessor noted that a laboratory's quality control blind samples were potentially identifiable. The laboratory is certified by the U.S Department of Health and Human Services (HHS). The laboratory gives the licensee chain-of-custody forms with preprinted numbers and bar codes. However, because the laboratory's blind samples are not processed with the licensee's chain-of-custody forms, the blind sample specimen chain-of-custody forms are out of sequence with the rest of the samples in the tray. The laboratory generates chain-of-custody forms for the blind samples, using the laboratory's next sequential numbers. As an interim corrective action, the laboratory is now mixing samples from different sources in the trays so that the non-sequential chain-of-custody forms for the blind samples will be less conspicuous. The laboratory is trying to design a better solution.
- One licensee reviewed the potential impact of ingestion of hemp seed oil products on tetrahydrocannabinol test results, disseminated its findings to the plant personnel, and incorporated them into FFD training.
- One licensee used Intoxilizer 5000 to verify that over-the-counter substances such as gum, Nyquil, Listerine, etc., do not cause false positive test results.
- One licensee laboratory reported that Klear is an effective adulterant for the marijuana metabolite but is easily detected if the specimen is tested for nitrites. Urine Luck made by Spectrum Laboratory is more difficult to detect but is also a less effective adulterant. Two blind specimens were spiked with marijuana metabolite. Urine Luck was introduced into one of the specimens. Onsite immunoassay screening found both specimens positive for marijuana. The HHS-certified laboratory confirmed both specimens positive, although the quantitation level for the specimen containing Urine Luck was slightly lower (189 ng/ml versus 206 ng/ml). The laboratory did not detect the presence of Urine Luck, not having done the additional adulterant testing it would have done if the screening and confirmation testing were contradictory. The specimens were retested a month later and found with quantitation levels of 163 ng/ml and 193 ng/ml, respectively. The laboratory will do more research to determine if Urine Luck is an effective adulterant for specimens having lower levels of the marijuana metabolite and to determine whether Multistix 10 SG effectively detects this adulterant.
- Other licensees reported they had started testing for the adulterants nitrate, pyridinium chlorochromate, and glutaraldehyde. One laboratory uses Test Sure, manufactured by SmithKline, to test for the following conditions and adulterants: pH, specific gravity, bleach, creatinine, glutaraldehyde, nitrate, and pyridine.
- Inaccurate laboratory results for blind specimens continued to point out human error problems, particularly the use of incorrect cutoff levels and procedural weaknesses. The different Department of Transportation and NRC testing requirements contribute to the use of incorrect cutoff levels, and laboratories should be alert to develop safeguards against this error. The cause of inaccuracies at one laboratory was that the

laboratory had no procedure to control parameter changes made by technologists on the screening instrument and to verify parameter settings. The laboratory corrected the problem by assigning passwords for the screening instrument (so that only approved personnel could change the instrument parameters) and by requiring another qualified technologist or supervisor to corroborate any changes before the instrument is used. In addition, the laboratory implemented a procedure to require a special quality control test of the instrument after instrument parameter changes, reagent changes, and calibration. The procedure involves spiking a sample at a concentration approximately twice as high as the highest calibrator.

- Several licensees reported that reviews of adulterant testing showed it to be useful and cost effective.
- Two licensees reported that the number of blind specimens they submitted to the laboratory was below the required 10% for one or more quarters of 1999. In one case, this was due to misunderstandings between the licensee and site FFD programs—administrative responsibilities for these programs were subsequently separated. No explanation was given for the second case.
- After establishing an onsite testing laboratory, one licensee suspended unescorted access for personnel who tested positive for cocaine and marijuana, pending results from the HHS-certified laboratory.

Several licensees reported working with laboratories to improve testing for specific adulterants. Licensees continued to report problems with laboratory performance.

- At one laboratory, a technician scanned the bar code identification on the specimen bottle lid rather than on the side of the bottle. Sample lids had been inadvertently switched, resulting in a sample identification error. The laboratory has eliminated retest bar codes on bottle lids to ensure that technicians scan the sides of specimen bottles.
- Several licensees reported that laboratories used incorrect cutoff levels or failed to test for the full list of substances.
- One licensee reported two blind specimens as negative for opiates when they should have been reported positive. The company that formulated the blind specimens said the blind specimen batches might not have been adequately mixed before they were prepared. In addition, the company was not performing gas chromatography/mass spectrometry on each specimen, only on the batches. The licensee has contracted with a new company to provide blind specimens.

## (2) Random Testing

Licensees continued to report incidents in which employees who should have been included in the random testing pool were omitted.

- A licensee reported that it has reinstated a 100% random testing rate.

- Several licensees reported that workers had been improperly excluded from the drug testing pool for extended periods. For one licensee, an employee who returned to the site after a lengthy stint at the Institute of Nuclear Power Operations (INPO) was not put back into the random FFD testing pool because he had been “hardcoded” out of the system. This licensee is reviewing the process of hardcoding individuals out of the pool.
- One licensee reported that it enhanced its quarterly “repetitive task” process for verifying the integrity of the random testing pool.
- Licensees continued to improve their notification process by reducing the interval between notifying and testing employees and/or by keeping them under continuous observation during this time.
- One licensee analyzed the number of random screenings by day of week and the rate of failures for each weekday during 1998 and 1999. The number of random screenings was greatest on Monday and generally fell on each subsequent day of the week. Very few screenings were done on Saturday or Sunday. In 1998 no positive results were identified on Saturdays or Sundays. However, in 1999 the positive rate on these days was very high (Saturday tests had a 12.5% positive rate and Sunday tests a 15% positive rate). The analysis suggests potentially useful changes to the testing schedule.

Licensees continued to report incidents in which employees who should have been included in the random testing pool database were not included.

- A licensee that did weekly quality control checks of the random pool discovered a software program interface problem as a result of which contractors were omitted. One weekly check showed 110 contractors to have been omitted.
- Another licensee reported that a new contract worker had not been included in the random test pool for the first draw after being badged and starting work.

### (3) Policies and Procedures

Several licensees reported having improved their FFD policies and procedures on the basis of their experience over the years.

- Another licensee reduced its marijuana cutoff value from 100 ng/ml to 50 ng/ml.
- One licensee introduced a lower cutoff value for alcohol testing for individuals in the followup program due to a previous positive test result for alcohol.
- One licensee reduced its testing list of drugs after finding that there had only been a single positive for barbiturates and benzodiazepines since its program was implemented in 1990.

- One licensee changed its specimen collection procedures to include an observed collection if the urine sample fell outside the range of 93–98 degrees Fahrenheit and an oral temperature did not match the urine temperature.
- Some licensees have instituted a zero tolerance policy, denying an employee access after a first positive drug test result.
- More licensees now count the detection of adulterants as a positive test result and sanction employees accordingly.
- A licensee prepared the following policy statement on prescription marijuana and cocaine and communicated the statement to its employees:

Certain drugs listed in the Controlled Substance Act such as marijuana and cocaine may be legally prescribed and used in certain states. However, federal regulations do not allow involvement with or possession or use of these drugs with or without a prescription by individuals assigned to [licensee name].

- Several licensees found weaknesses in their FFD records management procedures. In two cases, the records management process was adequate but not appropriately documented in procedures. In another case, FFD records being prepared for shipment to another location for imaging were not stored in 1-hour fire rated cabinets, as required in the site-established procedures. In a fourth case, a licensee found that the logbook maintained by the FFD program did not satisfy the definition of a permanent, bound record book.
- One licensee found that its procedures failed to specify FFD program training required for personnel assigned to work in the FFD program.
- To enhance overall FFD at the site, one licensee now requires employees to report non-job-related injuries to a supervisor or manager before the start of work or training activities if the injury could impair the employees' ability to safely perform job assignments. The supervisor evaluates injured employees' fitness and accommodates them as necessary.
- At one site, a computer data entry error allowed a contract worker to enter a protected area before the worker passed a pre-access test. Appropriate FFD personnel were trained and the access authorization process modified to prevent this from happening again.
- One licensee introduced limits on how much time an employee may take to give a urine specimen and how much water he may drink beforehand.
- One licensee specified that requests for retesting be made within 72 hours.
- One licensee reported that an event at another licensee's site helped it identify and address a potential weakness at its own site. The event involved an FFD testing

technician who recorded drug screen test results as negative before they were validated by the medical review officer (MRO). As a result, access was granted to a few individuals whose test results were later reported to be positive. To prevent this from happening at its own site, the licensee revised its procedures so that access authorization personnel can only accept reports that have been prepared by the MRO.

- One licensee updated its FFD procedures to include a precise formula by which to calculate blood alcohol concentration when an employee arrives at work.
- One licensee discovered that its pre-employment testing protocol implied breathalyzer testing irrespective of whether the candidate had yet been offered a job, leaving the licensee vulnerable to being found in violation of the Americans With Disabilities Act.
- One licensee initiated a standardized chain-of-custody form throughout its sites.

#### (4) Program and System Management

Licensees continued to report improvements in overall FFD program management.

- One licensee planed to merge FFD with Access Authorization to improve coordination and eliminate the potential for errors. This licensee is also trying to refine FFD performance indicators.
- A few licensees reported weaknesses in their behavioral observation programs because of insufficient training. Others reported improvements in their behavioral observation programs.
- FFD awareness activities continued to be reported (e.g., sending articles and newsletters to all employees, giving to all employees refrigerator magnets with the toll free employee assistance program telephone number).
- One licensee encouraged supervisors to complete refresher FFD training on time. The licensee now rigorously monitors overdue supervisor FFD training, sends an action request, and suspends unescorted access for a delinquent supervisor and for the workers who report to the supervisor.
- At one site it was discovered that supervisors who were not badged for unescorted access but who were required to report to the emergency operations facility did not have appropriate FFD training. Corrective actions were implemented to track FFD training requirements for nonbadged supervisors.
- Several licensees reported the value of canine searches in enhancing antidrug awareness at their sites, even the searches that typically did not discover drugs.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact the person listed below.

***/RA/***

Ledyard B. Marsh, Chief  
Events Assessment, Generic Communications  
and Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Technical Contact: Garmon West, Jr., Ph.D.  
301-415-1044  
E-mail: [fitnessforduty@nrc.gov](mailto:fitnessforduty@nrc.gov)

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

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact the person listed below.

***/RA/***

Ledyard B. Marsh, Chief  
Events Assessment, Generic Communications  
and Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Technical Contact: Garmon West, Jr., Ph.D.  
301-415-1044  
E-mail: fitnessforduty@nrc.gov

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

Distribution: IN File FGillespie EMcNeil GMizuno DDesaulniers  
PUBLIC JShapaker

ADAMS ACCESSION NUMBER: ML0102050419

ADAMS DOCUMENT TITLE: C:\119ffd9998.wpd

☒ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☒ Non-Sensitive

OFFICE	Tech Ed	RSS:DIPM	RSS:DIPM	IOLB:DIPM	DIPM
NAME	PKleene*via phone	GWest*	RPRosano*	GTracy*	BBoger*
DATE	11/9/00	11/14/00	11/15/00	12/14/00	01/11/2001

OFFICE	OGC	REXB	C:REXB
NAME	STreby	JTappert*	LBMarsh
DATE	01/16/2001	03/19/2001	03/28/2001

**OFFICIAL RECORD COPY**



Table 1A  
Test results for each test category, 1999

TEST CATEGORY	1999		
	NUMBER OF TESTS	POSITIVE TESTS	PERCENT POSITIVE
<b>Pre-Access</b>	69,139	934	1.35%
<b>Random</b>	54,457	140	0.26%
<b>For-Cause</b>	736	120	16.30%
<b>Followup</b>	3,008	30	1.00%
<b>Other</b>	1,742	39	2.24%
<b>TOTAL*</b>	129,082	1,263	0.98%
<b>TOTAL without Other category</b>	127,340	1,224	0.96%

Table 1B  
Test results for each test category, 1998

TEST CATEGORY	1998		
	NUMBER OF TESTS	POSITIVE TESTS	PERCENT POSITIVE
<b>Pre-Access</b>	69,146	822	1.19%
<b>Random</b>	56,969	157	0.28%
<b>For-Cause</b>	720	100	13.89%
<b>Followup</b>	2,863	43	1.50%
<b>Other</b>	1,929	32	1.66%
<b>TOTAL</b>	131,627	1,154	0.88%
<b>TOTAL without Other category</b>	129,698	1,122	0.87%

\*These totals have been 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 2A**  
**1999 Test results for each test category and work category**

<b>TEST CATEGORY</b>	<b>LICENSEE EMPLOYEES</b>	<b>LONG-TERM CONTRACTORS</b>	<b>SHORT-TERM CONTRACTORS</b>	<b>TOTAL</b>
<b>Pre-Access</b>				
Number Tested	8,386	1,339	59,414	<b>69,139</b>
Number Positive	44	10	880	<b>934</b>
Percent Positive	0.52%	0.75%	1.48%	<b>1.35%</b>
<b>Random</b>				
Number Tested	38,692	1,976	13,789	<b>54,457</b>
Number Positive	71	7	62	<b>140</b>
Percent Positive	0.18%	0.35%	0.45%	<b>0.26%</b>
<b>For-Cause</b>				
Number Tested	315	25	396	<b>736</b>
Number Positive	29	4	87	<b>120</b>
Percent Positive	9.21%	16.00%	21.97%	<b>16.30%</b>
<b>Followup</b>				
Number Tested	1,653	70	1,285	<b>3,008</b>
Number Positive	15	1	14	<b>30</b>
Percent Positive	0.91%	1.43%	1.09%	<b>1.00%</b>
<b>Other</b>				
Number Tested	648	318	776	<b>1,742</b>
Number Positive	4	2	33	<b>39</b>
Percent Positive	0.62%	0.63%	4.25%	<b>2.24%</b>
<b>TOTAL</b>				
Number Tested	<b>49,694</b>	<b>3,728</b>	<b>75,660</b>	<b>129,082</b>
Number Positive	<b>163</b>	<b>24</b>	<b>1,076</b>	<b>1,263</b>
Percent Positive	<b>0.33%</b>	<b>0.64%</b>	<b>1.42%</b>	<b>0.98%</b>
<b>TOTAL without Other category</b>				
Number Tested	<b>49,046</b>	<b>3,410</b>	<b>74,884</b>	<b>127,340</b>
Number Positive	<b>159</b>	<b>22</b>	<b>1,043</b>	<b>1,224</b>
Percent Positive	<b>0.32%</b>	<b>0.65%</b>	<b>1.39%</b>	<b>0.96%</b>

**Table 2B**  
**1998 Test results for each test category and work category**

<b>TEST CATEGORY</b>	<b>LICENSEE EMPLOYEES</b>	<b>LONG-TERM CONTRACTORS</b>	<b>SHORT-TERM CONTRACTORS</b>	<b>TOTAL</b>
<b>Pre-Access</b>				
Number Tested	9,422	1,368	58,356	<b>69,146</b>
Number Positive	50	12	760	<b>822</b>
Percent Positive	0.53%	0.88%	1.30%	<b>1.19%</b>
<b>Random</b>				
Number Tested	40,415	1,859	14,695	<b>56,969</b>
Number Positive	71	9	77	<b>157</b>
Percent Positive	0.18%	0.48%	0.52%	<b>0.28%</b>
<b>For-Cause</b>				
Number Tested	327	16	377	<b>720</b>
Number Positive	27	1	72	<b>100</b>
Percent Positive	8.26%	6.25%	19.10%	<b>13.89%</b>
<b>Followup</b>				
Number Tested	1,762	41	1,060	<b>2,863</b>
Number Positive	21	0	22	<b>43</b>
Percent Positive	1.19%	0.00%	2.08%	<b>1.50%</b>
<b>Other</b>				
Number Tested	752	192	985	<b>1,929</b>
Number Positive	6	1	25	<b>32</b>
Percent Positive	0.80%	0.52%	2.54%	<b>1.66%</b>
<b>TOTAL</b>				
Number Tested	<b>52,678</b>	<b>3,476</b>	<b>75,473</b>	<b>131,627</b>
Number Positive	<b>175</b>	<b>23</b>	<b>956</b>	<b>1,154</b>
Percent Positive	<b>0.33%</b>	<b>0.66%</b>	<b>1.27%</b>	<b>0.88%</b>
<b>TOTAL without Other category</b>				
Number Tested	<b>51,926</b>	<b>3,284</b>	<b>74,488</b>	<b>129,698</b>
Number Positive	<b>169</b>	<b>22</b>	<b>931</b>	<b>1,122</b>
Percent Positive	<b>0.33%</b>	<b>0.67%</b>	<b>1.25%</b>	<b>0.87%</b>

**Table 3A**  
**1999 Test results by test category**

<b>TEST CATEGORY</b>	<b>FIRST SIX MONTHS</b>	<b>SECOND SIX MONTHS</b>	<b>YEAR</b>
<b>Pre-Access</b>			
Number Tested	37,844	31,295	69,139
Number Positive	510	424	934
Percent Positive	1.35%	1.35%	1.35%
<b>Random</b>			
Number Tested	28,256	26,201	54,457
Number Positive	70	70	140
Percent Positive	0.25%	0.27%	0.26%
<b>For-Cause</b>			
Observed Behavior			
Number Tested	283	223	506
Number Positive	75	45	120
Percent Positive	26.50%	20.18%	23.72%
Post-Accident			
Number Tested	110	120	230
Number Positive	0	0	0
Percent Positive	0.00%	0.00%	0.00%
<b>Followup</b>			
Number Tested	1,543	1,465	3,008
Number Positive	16	14	30
Percent Positive	1.04%	0.96%	1.00%
<b>Other</b>			
Number Tested	866	876	1,742
Number Positive	18	21	39
Percent Positive	2.08%	2.40%	2.24%
<b>TOTAL</b>			
Number Tested	<b>68,902</b>	<b>60,180</b>	<b>129,082</b>
Number Positive	<b>689</b>	<b>574</b>	<b>1,263</b>
Percent Positive	<b>1.00%</b>	<b>0.95%</b>	<b>0.98%</b>
<b>TOTAL without Other category</b>			
Number Tested	<b>68,036</b>	<b>59,304</b>	<b>127,340</b>
Number Positive	<b>671</b>	<b>553</b>	<b>1,224</b>
Percent Positive	<b>0.99%</b>	<b>0.93%</b>	<b>0.96%</b>

**Table 3B**  
**1998 Test results by test category**

<b>TEST CATEGORY</b>	<b>FIRST SIX MONTHS</b>	<b>SECOND SIX MONTHS</b>	<b>YEAR</b>
<b>Pre-Access</b>			
Number Tested	35,455	33,691	69,146
Number Positive	433	389	822
Percent Positive	1.22%	1.15%	1.19%
<b>Random</b>			
Number Tested	29,251	27,718	56,969
Number Positive	80	77	157
Percent Positive	0.27%	0.28%	0.28%
<b>For-Cause</b>			
Observed Behavior			
Number Tested	213	242	455
Number Positive	49	48	97
Percent Positive	23.00%	19.83%	21.32%
Post-Accident			
Number Tested	176	89	265
Number Positive	2	1	3
Percent Positive	1.14%	1.12%	1.13%
<b>Followup</b>			
Number Tested	1,451	1,412	2,863
Number Positive	18	25	43
Percent Positive	1.24%	1.77%	1.50%
<b>Other</b>			
Number Tested	1,034	895	1,929
Number Positive	19	13	32
Percent Positive	1.84%	1.45%	1.66%
<b>TOTAL</b>			
Number Tested	<b>67,580</b>	<b>64,047</b>	<b>131,627</b>
Number Positive	<b>601</b>	<b>553</b>	<b>1,154</b>
Percent Positive	<b>0.89%</b>	<b>0.86%</b>	<b>0.88%</b>
<b>TOTAL without Other category</b>			
Number Tested	<b>66,546</b>	<b>63,152</b>	<b>129,698</b>
Number Positive	<b>582</b>	<b>540</b>	<b>1,122</b>
Percent Positive	<b>0.87%</b>	<b>0.86%</b>	<b>0.87%</b>

**Table 4A**  
**1999 Test results for licensee employees and contractor personnel**

TEST CATEGORY	LICENSEE EMPLOYEES			CONTRACTORS (Long-Term/Short Term)		
	First Six Months	Second Six Months	Year	First Six Months	Second Six Months	Year
<b>Pre-Access</b>						
Number Tested	4,691	3,695	8,386	33,153	27,600	60,753
Number Positive	21	23	44	489	401	890
Percent Positive	0.45%	0.62%	0.52%	1.47%	1.45%	1.46%
<b>Random</b>						
Number Tested	20,020	18,672	38,692	8,236	7,529	15,765
Number Positive	32	39	71	38	31	69
Percent Positive	0.16%	0.21%	0.18%	0.46%	0.41%	0.44%
<b>For-Cause</b>						
Observed Behavior						
Number Tested	112	91	203	171	132	303
Number Positive	20	9	29	55	36	91
Percent Positive	17.86%	9.89%	14.29%	32.16%	27.27%	30.03%
Post-Accident						
Number Tested	60	52	112	50	68	118
Number Positive	0	0	0	0	0	0
Percent Positive	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Followup</b>						
Number Tested	818	835	1,653	725	630	1,355
Number Positive	8	7	15	8	7	15
Percent Positive	0.98%	0.84%	0.91%	1.10%	1.11%	1.11%
<b>Other</b>						
Number Tested	316	332	648	550	544	1,094
Number Positive	2	2	4	16	19	35
Percent Positive	0.63%	0.60%	0.62%	2.91%	3.49%	3.20%
<b>TOTAL</b>						
Number Tested	<b>26,017</b>	<b>23,677</b>	<b>49,694</b>	<b>42,885</b>	<b>36,503</b>	<b>79,388</b>
Number Positive	<b>83</b>	<b>80</b>	<b>163</b>	<b>606</b>	<b>494</b>	<b>1,100</b>
Percent Positive	<b>0.32%</b>	<b>0.34%</b>	<b>0.33%</b>	<b>1.41%</b>	<b>1.35%</b>	<b>1.39%</b>
<b>TOTAL without Other category</b>						
Number Tested	<b>25,701</b>	<b>23,345</b>	<b>49,046</b>	<b>42,335</b>	<b>35,959</b>	<b>78,294</b>
Number Positive	<b>81</b>	<b>78</b>	<b>159</b>	<b>590</b>	<b>475</b>	<b>1,065</b>
Percent Positive	<b>0.32%</b>	<b>0.33%</b>	<b>0.32%</b>	<b>1.39%</b>	<b>1.32%</b>	<b>1.36%</b>

**Table 4B**  
**1998 Test results for licensee employees and contractor personnel**

TEST CATEGORY	LICENSEE EMPLOYEES			CONTRACTORS (Long-Term/Short Term)		
	First Six Months	Second Six Months	Year	First Six Months	Second Six Months	Year
<b>Pre-Access</b>						
Number Tested	5,141	4,281	9,422	30,314	29,410	59,724
Number Positive	25	25	50	408	364	772
Percent Positive	0.49%	0.58%	0.53%	1.35%	1.24%	1.29%
<b>Random</b>						
Number Tested	20,891	19,524	40,415	8,360	8,194	16,554
Number Positive	41	30	71	39	47	86
Percent Positive	0.20%	0.15%	0.18%	0.47%	0.57%	0.52%
<b>For-Cause</b>						
Observed Behavior						
Number Tested	95	90	185	118	152	270
Number Positive	13	13	26	36	35	71
Percent Positive	13.68%	14.44%	14.05%	30.51%	23.03%	26.30%
Post-Accident						
Number Tested	92	50	142	84	39	123
Number Positive	0	1	1	2	0	2
Percent Positive	0.00%	2.00%	0.70%	2.38%	0.00%	1.63%
<b>Followup</b>						
Number Tested	867	895	1,762	584	517	1,101
Number Positive	9	12	21	9	13	22
Percent Positive	1.04%	1.34%	1.19%	1.54%	2.51%	2.00%
<b>Other</b>						
Number Tested	416	336	752	618	559	1,177
Number Positive	2	4	6	17	9	26
Percent Positive	0.48%	1.19%	0.80%	2.75%	1.61%	2.21%
<b>TOTAL</b>						
Number Tested	27,502	25,176	52,678	40,078	38,871	78,949
Number Positive	90	85	175	511	468	979
Percent Positive	0.33%	0.34%	0.33%	1.28%	1.20%	1.24%
<b>TOTAL without Other category</b>						
Number Tested	27,086	24,840	51,926	39,460	38,312	77,772
Number Positive	88	81	169	494	459	953
Percent Positive	0.32%	0.33%	0.33%	1.25%	1.20%	1.23%

**Table 5A**  
**1999 Test results for long-term and short-term contractor personnel**

TEST CATEGORY	LONG-TERM CONTRACTORS			SHORT-TERM CONTRACTORS		
	First Six Months	Second Six Months	Year	First Six Months	Second Six Months	Year
<b>Pre-Access</b>						
Number Tested	752	587	1,339	32,401	27,013	59,414
Number Positive	5	5	10	484	396	880
Percent Positive	0.66%	0.85%	0.75%	1.49%	1.47%	1.48%
<b>Random</b>						
Number Tested	947	1,029	1,976	7,289	6,500	13,789
Number Positive	3	4	7	35	27	62
Percent Positive	0.32%	0.39%	0.35%	0.48%	0.42%	0.45%
<b>For-Cause</b>						
Observed Behavior						
Number Tested	6	11	17	165	121	286
Number Positive	2	2	4	53	34	87
Percent Positive	33.33%	18.18%	23.53%	32.12%	28.10%	30.42%
Post-Accident						
Number Tested	2	6	8	48	62	110
Number Positive	0	0	0	0	0	0
Percent Positive	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Followup</b>						
Number Tested	33	37	70	692	593	1,285
Number Positive	1	0	1	7	7	14
Percent Positive	3.03%	0.00%	1.43%	1.01%	1.18%	1.09%
<b>Other</b>						
Number Tested	155	163	318	395	381	776
Number Positive	1	1	2	15	18	33
Percent Positive	0.65%	0.61%	0.63%	3.80%	4.72%	4.25%
<b>TOTAL</b>						
Number Tested	1,895	1,833	3,728	40,990	34,670	75,660
Number Positive	12	12	24	594	482	1,076
Percent Positive	0.63%	0.65%	0.64%	1.45%	1.39%	1.42%
<b>TOTAL without Other category</b>						
Number Tested	1,740	1,670	3,410	40,595	34,289	74,884
Number Positive	11	11	22	579	464	1,043
Percent Positive	0.63%	0.66%	0.65%	1.43%	1.35%	1.39%



**Table 5B**  
**1998 Test results for long-term and short-term contractor personnel**

TEST CATEGORY	LONG-TERM CONTRACTORS			SHORT-TERM CONTRACTORS		
	First Six Months	Second Six Months	Year	First Six Months	Second Six Months	Year
<b>Pre-Access</b>						
Number Tested	698	670	1,368	29,616	28,740	58,356
Number Positive	4	8	12	404	356	760
Percent Positive	0.57%	1.19%	0.88%	1.36%	1.24%	1.30%
<b>Random</b>						
Number Tested	973	886	1,859	7,387	7,308	14,695
Number Positive	8	1	9	31	46	77
Percent Positive	0.82%	0.11%	0.48%	0.42%	0.63%	0.52%
<b>For-Cause</b>						
Observed Behavior						
Number Tested	3	6	9	115	146	261
Number Positive	1	0	1	35	35	70
Percent Positive	33.33%	0.00%	11.11%	30.43%	23.97%	26.82%
Post-Accident						
Number Tested	3	4	7	81	35	116
Number Positive	0	0	0	2	0	2
Percent Positive	0.00%	0.00%	0.00%	2.47%	0.00%	1.72%
<b>Followup</b>						
Number Tested	24	17	41	560	500	1,060
Number Positive	0	0	0	9	13	22
Percent Positive	0.00%	0.00%	0.00%	1.61%	2.60%	2.08%
<b>Other</b>						
Number Tested	88	104	192	530	455	985
Number Positive	1	0	1	16	9	25
Percent Positive	1.14%	0.00%	0.52%	3.02%	1.98%	2.54%
<b>TOTAL</b>						
Number Tested	1,789	1,687	3,476	38,289	37,184	75,473
Number Positive	14	9	23	497	459	956
Percent Positive	0.78%	0.53%	0.66%	1.30%	1.23%	1.27%
<b>TOTAL without Other category</b>						
Number Tested	1,701	1,583	3,284	37,759	36,729	74,488
Number Positive	13	9	22	481	450	931
Percent Positive	0.76%	0.57%	0.67%	1.27%	1.23%	1.25%

**Table 6A**  
**1999 Number of confirmed positives by substance**

<b>SUBSTANCE</b>	<b>FIRST SIX MONTHS</b>		<b>SECOND SIX MONTHS</b>		<b>TOTAL</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Marijuana	345	52.19%	327	57.17%	<b>672</b>	<b>54.50%</b>
Cocaine	151	22.84%	122	21.33%	<b>273</b>	<b>22.14%</b>
Opiates	4	0.61%	12	2.10%	<b>16</b>	<b>1.30%</b>
Amphetamines	20	3.03%	20	3.50%	<b>40</b>	<b>3.24%</b>
Phencyclidine	0	0.00%	2	0.35%	<b>2</b>	<b>0.16%</b>
Alcohol	141	21.33%	89	15.56%	<b>230</b>	<b>18.65%</b>
<b>TOTAL</b>	<b>661</b>		<b>572</b>		<b>1,233</b>	

**Table 6B**  
**1998 Number of confirmed positives by substance**

<b>SUBSTANCE</b>	<b>FIRST SIX MONTHS</b>		<b>SECOND SIX MONTHS</b>		<b>TOTAL</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Marijuana	327	53.34%	279	51.67%	<b>606</b>	<b>52.56%</b>
Cocaine	137	22.35%	132	24.44%	<b>269</b>	<b>23.33%</b>
Opiates	13	2.12%	6	1.11%	<b>19</b>	<b>1.65%</b>
Amphetamines	32	5.22%	14	2.59%	<b>46</b>	<b>3.99%</b>
Phencyclidine	1	0.16%	0	0.00%	<b>1</b>	<b>0.09%</b>
Alcohol	103	16.80%	109	20.19%	<b>212</b>	<b>18.39%</b>
<b>TOTAL</b>	<b>613</b>		<b>540</b>		<b>1153</b>	

**Table 7A**

**1999 Confirmed positives test results by substance for licensee employees and contractors**

<b>SUBSTANCE</b>	<b>LICENSEE EMPLOYEES</b>		<b>CONTRACTORS (Long-Term/Short-Term)</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Marijuana	65	41.67%	607	56.36%
Cocaine	39	25.00%	234	21.73%
Opiates	0	0.00%	16	1.49%
Amphetamines	3	1.92%	37	3.44%
Phencyclidine	0	0.00%	2	0.19%
Alcohol	49	31.41%	181	16.81%
<b>TOTAL</b>	<b>156</b>		<b>1,077</b>	

**Table 7B**

**1998 Confirmed positives test results by substance for each worker category**

<b>TYPE OF SUBSTANCE</b>	<b>LICENSEE EMPLOYEES</b>		<b>CONTRACTORS (Long-Term/Short-Term)</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Marijuana	78	43.58%	528	54.21%
Cocaine	41	22.91%	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%
<b>TOTAL</b>	<b>179</b>		<b>974</b>	

**Table 8A**  
**Significant\* fitness-for-duty events (1990–1999)**

Type of Event	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
Reactor Operators	19	16	18	8	7	8	8	9	5	5	103
Licensee Supervisors	26	16	22	25	11	16	19	16	10	2	163
Contract Supervisors	12	24	28	16	11	10	8	10	10	12	141
FFD Program Personnel	1	5	0	0	1	0	2	0	3	2	14
Substances Found	6	8	6	2	0	5	5	4	0	2	38
<b>Total</b>	<b>64</b>	<b>69</b>	<b>74</b>	<b>51</b>	<b>30</b>	<b>39</b>	<b>42</b>	<b>39</b>	<b>28</b>	<b>23</b>	<b>459</b>

\*Subsection 73 of 10 CFR Part 26 requires reporting units to provide the NRC with information on significant FFD events, such as events involving licensed operators and supervisors, and on controlled substances found in the protected area of the plant.

**Table 8B**  
**Significant fitness-for-duty events (1990–1998)**

Type of Event	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
Reactor Operators	19	16	18	8	7	8	8	9	5	98
Licensee Supervisors	26	16	22	25	11	16	19	16	10	161
Contract Supervisors	12	24	28	16	11	10	8	10	10	129
FFD Program Personnel	1	5	0	0	1	0	2	0	3	12
Substances Found	6	8	6	2	0	5	5	4	0	36
<b>Total</b>	<b>64</b>	<b>69</b>	<b>74</b>	<b>51</b>	<b>30</b>	<b>39</b>	<b>42</b>	<b>39</b>	<b>28</b>	<b>436</b>

**Table 9A**  
**Trends in testing by test type (1990–1999)**

Type of Test	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Pre-Access</b>											
Number Tested	122,491	104,508	104,842	91,471	80,217	79,305	81,041	84,320	69,146	69,139	886,480
Number Positive	1,548	983	1,110	952	977	1,122	1,132	1,096	822	934	10,676
Percent Positive	1.26%	0.94%	1.06%	1.04%	1.22%	1.41%	1.40%	1.30%	1.19%	1.35%	1.20%
<b>Random</b>											
Number Tested	148,743	153,818	156,730	146,605	78,391	66,791	62,307	60,829	56,969	54,457	985,640
Number Positive	550	510	461	341	223	180	202	172	157	140	2,936
Percent Positive	0.37%	0.33%	0.29%	0.23%	0.28%	0.27%	0.32%	0.28%	0.28%	0.26%	0.30%
<b>For-Cause</b>											
Number Tested	732	727	696	751	758	763	848	722	720	736	7,453
Number Positive	214	167	178	163	122	139	138	149	100	120	1,490
Percent Positive	29.23%	22.97%	25.57%	21.70%	16.09%	18.22%	16.27%	20.64%	13.89%	16.30%	19.99%
<b>Followup</b>											
Number Tested	2,633	3,544	4,283	4,139	3,875	3,262	3,262	3,296	2,863	3,008	34,165
Number Positive	65	62	69	56	50	35	40	31	43	30	481
Percent Positive	2.47%	1.75%	1.61%	1.35%	1.29%	1.07%	1.23%	0.94%	1.50%	1.00%	1.41%
<b>Other</b>											
Number Tested	3,610	3,228	4,998	2,511	2,125	2,778	2,082	1,928	1,929	1,742	26,931
Number Positive	32	22	59	36	22	55	37	36	32	39	370
Percent Positive	0.89%	0.68%	1.18%	1.43%	1.04%	1.98%	1.78%	1.87%	1.66%	2.24%	1.37%
<b>TOTAL</b>											
Number Tested	278,209	265,825	271,549	245,477	165,366	152,899	149,540	151,095	131,627	129,082	1,940,669
Number Positive	2,409	1,744	1,877	1,548	1,394	1,531	1,549	1,484	1,154	1,263	15,953
Percent Positive	0.87%	0.66%	0.69%	0.63%	0.84%	1.00%	1.04%	0.98%	0.88%	0.98%	0.82%
<b>TOTAL without Other category</b>											
Number Tested	274,599	262,597	266,551	242,966	163,241	150,121	147,458	149,167	129,698	127,340	1,913,738
Number Positive	2,377	1,722	1,818	1,512	1,372	1,476	1,512	1,448	1,122	1,224	15,583
Percent Positive	0.87%	0.66%	0.68%	0.62%	0.84%	0.98%	1.03%	0.97%	0.87%	0.96%	0.81%

**Table 9B**  
**Trends in testing by test type (1990–1998)**

Type of Test	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
<b>Pre-Access</b>										
Number Tested	122,491	104,508	104,842	91,471	80,217	79,305	81,041	84,320	69,146	817,341
Number Positive	1,548	983	1,110	952	977	1,122	1,132	1,096	822	9,742
Percent Positive	1.26%	0.94%	1.06%	1.04%	1.22%	1.41%	1.40%	1.30%	1.19%	1.19%
<b>Random</b>										
Number Tested	148,743	153,818	156,730	146,605	78,391	66,791	62,307	60,829	56,969	931,183
Number Positive	550	510	461	341	223	180	202	172	157	2,796
Percent Positive	0.37%	0.33%	0.29%	0.23%	0.28%	0.27%	0.32%	0.28%	0.28%	0.30%
<b>For-Cause</b>										
Number Tested	732	727	696	751	758	763	848	722	720	6,717
Number Positive	214	167	178	163	122	139	138	149	100	1,370
Percent Positive	29.23%	22.97%	25.57%	21.70%	16.09%	18.22%	16.27%	20.64%	13.89%	20.40%
<b>Followup</b>										
Number Tested	2,633	3,544	4,283	4,139	3,875	3,262	3,262	3,296	2,863	31,157
Number Positive	65	62	69	56	50	35	40	31	43	451
Percent Positive	2.47%	1.75%	1.61%	1.35%	1.29%	1.07%	1.23%	0.94%	1.50%	1.45%
<b>Other</b>										
Number Tested	3,610	3,228	4,998	2,511	2,125	2,778	2,082	1,928	1,929	25,189
Number Positive	32	22	59	36	22	55	37	36	32	331
Percent Positive	0.89%	0.68%	1.18%	1.43%	1.04%	1.98%	1.78%	1.87%	1.66%	1.31%
<b>TOTAL</b>										
Number Tested	278,209	265,825	271,549	245,477	165,366	152,899	149,540	151,095	131,627	1,811,587
Number Positive	2,409	1,744	1,877	1,548	1,394	1,531	1,549	1,484	1,154	14,690
Percent Positive	0.87%	0.66%	0.69%	0.63%	0.84%	1.00%	1.04%	0.98%	0.88%	0.81%
<b>TOTAL without Other category</b>										
Number Tested	274,599	262,597	266,551	242,966	163,241	150,121	147,458	149,167	129,698	1,786,398
Number Positive	2,377	1,722	1,818	1,512	1,372	1,476	1,512	1,448	1,122	14,359
Percent Positive	0.87%	0.66%	0.68%	0.62%	0.84%	0.98%	1.03%	0.97%	0.87%	0.80%

**Table 10A**  
**Trends in substances identified (1990–1999)**

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

**Table 10B**  
**Trends in substances identified (1990–1998)**

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

\* These totals do not include positives for multiple substances and other substances than those listed above.

**Table 11A**

**Trends in positive test rates for workers with unescorted access (1990–1999)\***

	Positive Test Rate
<b>1990</b>	0.54%
<b>1991</b>	0.47%
<b>1992</b>	0.44%
<b>1993</b>	0.37%
<b>1994</b>	0.48%
<b>1995</b>	0.50%
<b>1996</b>	0.57%
<b>1997</b>	0.54%
<b>1998</b>	0.50%
<b>1999</b>	0.50%

**Table 11B**

**Trends in positive test rates for workers with unescorted access (1990–1998)\***

	Positive Test Rate
<b>1990</b>	0.54%
<b>1991</b>	0.47%
<b>1992</b>	0.44%
<b>1993</b>	0.37%
<b>1994</b>	0.48%
<b>1995</b>	0.50%
<b>1996</b>	0.57%
<b>1997</b>	0.54%
<b>1998</b>	0.50%

\*Includes random, for-cause, and followup testing results. The random test rate was reduced from 100% to 50% in 1994.



LIST OF RECENTLY ISSUED  
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
2001-01	The Importance of Accurate Inventory Controls to Prevent the Unauthorized Possession of Radioactive Material	03/26/01	All material licensees
2000-17, Supp. 2	Crack in Weld Area of Reactor Coolant System Hot Leg Piping at V.C. Summer	02/28/01	All holders of operating licenses for nuclear power reactors except those who has ceased operations and have certified that fuel has permanently removed from reactor vessel
2000-22	Medical Misadministrations Caused by Human Errors Involving Gamma Stereotactic Radiosurgery (GAMMA KNIFE)	12/18/00	All medical use licensees authorized to conduct gamma stereotactic radiosurgery treatments
2000-21	Detached Check Valve Disc not Detected by Use of Acoustic and Magnetic Nonintrusive Test Techniques	12/15/00	All holders of OLs for nuclear power reactors except those who have ceased operations and have certified that fuel has been permanently removed from the reactor
2000-20	Potential Loss of Redundant Safety Related Equipment Due to Lack of a High-Energy Line Break Barrier	12/11/2000	All holders of operating licenses or construction permits for nuclear power reactors
2000-19	Implementation of Human Use Research Protocols Involving U.S. Nuclear Regulatory Commission Regulated Materials	12/05/2000	All medical use licensees
2000-18	Substandard Material Supplied by Chicago Bullet Proof Systems	11/29/2000	All 10 CFR Part 50 licensees and applicants. All category 1 fuel facilities. All 10 CFR Part 72 licensees and applicants