

**Exhibit A2 - 1**  
**Individuals Subject to the FFD Program**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>FFD Program Personnel Subject to the Rule</b>						<b>Subpart A</b>
<i>These parameters are used in the equations below:</i>						
		Number of MROs per program	NUM mros	2	Assumption	
		% multiplier to spread compliance costs across all programs	PER compliance	25%	Assumption	
<i>Industry Practices: One-time cost per program to subject MROs to pre-access drug and alcohol testing to comply with the former rule</i>						
No additional parameters						
<i>Industry Practices: One-time cost per program to pay for MRO travel to a licensee collection facility to comply with the former rule</i>						
		Hours of MRO travel, waiting, and specimen collection time	HOURS travel	6.0 hr	Assumption	
<i>Industry Practices: One-time cost per program to conduct FFD training and to administer the comprehensive examination on their MROs to comply with the former rule</i>						
		Length of FFD program training for MROs	HOURS training	2.0 hr	Assumption	
<i>Industry Practices: Annual cost per program to administer a random drug and alcohol testing program for FFD program personnel to comply with the former rule</i>						
		% tested by a random drug program per year	PER random	50%	Rule requirement	
<i>Industry Practices: Annual cost per program to pay for MROs selected for random drug and alcohol testing to travel to the specimen collection facility and provide a specimen to comply with the former rule</i>						
		% tested by a random drug program per year	PER random	50%	Rule requirement	
		Hours of MRO travel, waiting, and specimen collection time	HOURS travel	6.0 hr	Assumption	
<b>Individuals Subject to Another Acceptable Program</b>						<b>Subpart A</b>
<i>These parameters are used in the equations below:</i>						
		Annual number of applicants for initial authorization covered by other federal or state program per unit	NUM applicants	10	Assumption	
		% of fed or state programs that qualify	PER covered	50%	Assumption	
<i>Annual savings per program from bypassing pre-access drug and alcohol testing for the percentage of applicants covered by an acceptable program</i>						
No additional parameters						
<i>Annual savings per program from bypassing the training and examination requirement for the percentage of applicants covered by an acceptable program</i>						
		Length of non-supervisory level training	HOURS non-supervisory	2.00 hr	Assumption	
		Length of comprehensive examination	HOURS examination	0.5 hr	Assumption	
<i>Annual savings per program from requiring fewer contracted trainer hours to conduct trainings and examinations on the percentage of applicants who are covered by an acceptable program</i>						
		Length of non-supervisory level training	HOURS non-supervisory	2.00 hr	Assumption	
		Length of comprehensive examination	HOURS examination	0.5 hr	Assumption	
		Hours of training preparation and examination grading	HOURS preparation	2.0 hr	Assumption	
<i>Annual savings per program from not conducting remedial training and reexamining the percentage of applicants who are covered by an acceptable program and fail the comprehensive examination</i>						
		Length of remedial supervisory-level training	HOURS remedial	0.75 hr	Assumption	
		Length of comprehensive examination	HOURS examination	0.5 hr	Assumption	
		% failing comprehensive exam	PER failing	10%	Assumption	
<i>Annual savings per program from requiring fewer contracted trainer hours to conduct remedial training and reexamining those applicants covered by an acceptable program that fail the comprehensive examination</i>						
		Length of remedial supervisory-level training	HOURS remedial	0.75 hr	Assumption	
		Length of comprehensive examination	HOURS examination	0.5 hr	Assumption	
		% failing comprehensive exam	PER failing	10%	Assumption	
<i>Annual savings per program from not subjecting existing employees who are covered by an acceptable program to a duplicative random drug and alcohol testing program</i>						
		Annual number of existing employees covered by another federal or state program	NUM employees	40	Assumption	
		% tested by a random drug program per year	PER random	50%	Rule requirement	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Background Checks, Psychological Evaluations, Credit History, Criminal History</b>					<b>Subpart B</b>	<b>26.31(b)(1)(i)</b>
<i>Base annual savings per program from eliminating the requirement to update background checks every three years</i>						
		Base number of FFD program personnel per unit for each program	NUM personnel-base	1.5	Assumption	
		Cost of updating background investigation	COST background investigation update	\$150	Assumption	
		Factor to adjust the periodic cost (every three years) to an annual cost	PER annualized-1	33.3%	Calculated	
<i>Additional savings per program from performing fewer background check updates for programs with onsite testing</i>						
		Additional number of FFD program personnel per facility with onsite testing	NUM personnel-onsite testing	1	Assumption	
		Cost of updating background investigation	COST background investigation update	\$150	Assumption	
		Factor to adjust the periodic cost (every three years) to an annual cost	PER annualized-1	33.3%	Calculated	
<i>Additional savings per program from performing fewer background check updates for programs with onsite collection</i>						
		Additional number of FFD program personnel per facility for programs with onsite collection	NUM personnel-onsite collection	0.5	Assumption	
		Cost of updating background investigation	COST background investigation update	\$150	Assumption	
		Percentage of facilities with onsite collection per program	PER collection	95.0%	Assumption	
		Factor to adjust the periodic cost (every three years) to an annual cost	PER annualized-1	33.3%	Calculated	
<i>Base annual savings per program from reducing the frequency of the psychological evaluation and criminal history and credit check update</i>						
		Base number of FFD program personnel per unit for each program	NUM personnel-base	1.5	Assumption	
		Cost of updating psychological evaluation	COST psychological evaluation update	\$300	Assumption	
		Cost of updating individual's credit and criminal history	COST criminal/credit update	\$50	Assumption	
		Factor to adjust the periodic savings to an annual savings	PER annualized-2	13.3%	Calculated	
<i>Additional per program savings from reducing the frequency of the psychological evaluation and criminal history and credit check update for programs with onsite testing</i>						
		Additional number of FFD program personnel per facility with onsite testing	NUM personnel-onsite testing	1	Assumption	
		Cost of updating psychological evaluation	COST psychological evaluation update	\$300	Assumption	
		Cost of updating individual's credit and criminal history	COST criminal/credit update	\$50	Assumption	
		Factor to adjust the periodic savings to an annual savings	PER annualized-2	13.3%	Calculated	
<i>Additional savings per program from reducing the frequency of the psychological evaluation and criminal history and credit check update for programs with onsite collection</i>						
		Additional number of FFD program personnel per facility for programs with onsite collection	NUM personnel-onsite collection	0.5	Assumption	
		Cost of updating psychological evaluation	COST psychological evaluation update	\$300	Assumption	
		Cost of updating individual's credit and criminal history	COST criminal/credit update	\$50	Assumption	
		Percentage of facilities with onsite collection per program	PER collection	95.0%	Assumption	
		Factor to adjust the periodic savings to an annual savings	PER annualized-2	13.3%	Calculated	
<b>DOT-Approved Specimen Collection Facilities</b>					<b>Subpart B</b>	<b>26.31(b)(2)</b>
<i>Annual savings per program from allowing MROS and other offsite contracted personnel to utilize facilities conforming to DOT requirements</i>						
		Number of MROs per program	NUM mros	2	Assumption	
		% tested by a random drug program per year	PER random	50.0%	Rule requirement	
		% of contracted FFD personnel that live closer to a DOT-approved collection facility than to a licensee's standard collection facility	PER distance	33.3%	Assumption	
		MRO hours of saved travel, waiting and specimen collection	HOURS travel	2.0 hr	Assumption	

**Exhibit A2 - 2**  
**Written Policies and Procedures**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Policy and Procedure Revisions - Overall Program</b>					<b>Subpart B</b>	<b>26.27(a)</b>
		<i>One-time cost per program to account for FFD manager and clerical personnel time and to contract a legal consultant to revise FFD policies and procedures</i>				
		Hours of FFD program manager labor to develop and revise policies and procedures	HOURS manager	370.0 hr	Assumption	
		Hours of clerical personnel support of revision of policies and procedures	HOURS clerical	95.0 hr	Assumption	
		Hours of legal assistance to review and revise policies and procedures	HOURS legal	95.0 hr	Assumption	
		<i>One-time cost per program to account for facility supervisor time to implement the corporate policies at the facility level</i>				
		Hours of facility supervisor time to implement revised corporate policies and procedures	HOURS facility supervisor	40.0 hr	Assumption	
<b>Licensee Testing Facility Policy and Procedure Revisions</b>					<b>Subpart E</b>	<b>26.127</b>
		<i>One time costs per FFD program with onsite testing</i>				
		Hours FFD manager	HOURS FFD manager	120.0 hr	Assumption	
		Hours Lab supervisor	HOURS lab supervisor	160.0 hr	Assumption	
		Hours Clerical	HOURS clerical	40.0 hr	Assumption	
		Hours Legal	HOURS legal	40.0 hr	Assumption	
<b>NRC Implementation - One-time Revision of Inspection Procedures</b>						
		<i>One-time cost for NRC to revise inspection procedures</i>				
		Time for FFD manager to revise the drug and alcohol testing / access authorization inspection procedures	HOURS FFDmanager	20.0 hr	Assumption	
		Time for FFD manager to write fatigue inspection procedures	HOURS FFDmanager	20.0 hr	Assumption	

**Exhibit A2 - 3**  
**Training and Examinations**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Revise and Implement Training, Including Behavioral Observation</b>						<b>26.29(a)</b>
<i>These parameters are used in the equations below:</i>						
		Number of training sessions per unit	NUM sessions	50	Assumption	
		% of cost applied to a given facility	PER cost	25%	Assumption	
		% of employees trained at the non-supervisory level under the former rule	PER non-supervisory	85%	Assumption	
		Length of FFD program training	HOURS training	4.00 hr	Assumption	
		Length of comprehensive examination	HOURS examination	0.5 hr	Assumption	
<i>One-time cost per program associated with revising the training program and training materials to account for new FFD provisions in the final rule</i>						
		Hours of trainer time per program to revise the training program and training materials	HOURStrainer	20.0 hr	Assumption	
		Hours of training manager time per program to revise the training program and training materials	HOURStraining manager	2.0 hr	Assumption	
		Hours of FFD program manager time per program to revise the training program and training materials	HOURSmanager	2.0 hr	Assumption	
		Hours of clerical personnel to support the revision of the training program and training materials	HOURSclerical	4.0 hr	Assumption	
<i>One-time cost per program associated with revising the training program to include fatigue KAs</i>						
		Hours of FFD program manager time per program revise the training program to include fatigue KAs	HOURS ffd manager-fatigue	60.0 hr	Assumption	
		Hours of clerical personnel to support the revision of the training program to include fatigue KAs	HOURS clerical-fatigue	8.0 hr	Assumption	
<i>One-time costs per program to retrain existing employees on the fatigue-related KAs</i>						
		Length of training increment addressing the fatigue-related KAs	HOURS training-fatigue	1.00 hr	Assumption	
		Length of comprehensive examination increment addressing the fatigue-related KAs	HOURS examination-fatigue	0.08 hr	Assumption	
<i>One-time costs per program for trainers to administer the training on the fatigue-related KAs</i>						
		Length of training increment addressing the fatigue-related KAs	HOURS training-fatigue	1.00 hr	Assumption	
		Length of comprehensive examination increment addressing the fatigue-related KAs	HOURS examination-fatigue	0.08 hr	Assumption	
		Hours of preparation and examination grading	HOURS preparation-fatigue	0.50 hr		
<i>Annual costs per program for incoming employees to take the training for fatigue-related KAs</i>						
		Length of training increment addressing the fatigue-related KAs	HOURS training-fatigue	1.00 hr	Assumption	
		Length of comprehensive examination increment addressing the fatigue-related KAs	HOURS examination-fatigue	0.08 hr	Assumption	
<i>Annual costs per program for trainers to administer the training course for fatigue-related KAs</i>						
		Length of training increment addressing the fatigue-related KAs	HOURS training-fatigue	1.00 hr	Assumption	
		Length of comprehensive examination increment addressing the fatigue-related KAs	HOURS examination-fatigue	0.08 hr	Assumption	
<i>Annual cost per program for employees to take the refresher training increment addressing fatigue-related KAs</i>						
		Length of fatigue-related KA refresher training modules	HOURS training-fatigue	0.50 hr	Assumption	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<i>Annual cost per program for trainers to administer the refresher training increment addressing fatigue-related KAs</i>						
		Length of fatigue-related KA refresher training modules	HOURS training-fatigue	0.50 hr	Assumption	
		Hours of training preparation and examination grading for fatigue-related increment	HOURS preparation-fatigue	1.50 hr		
<i>Annual costs per program for employees to take the comprehensive challenge examination increment addressing the fatigue-related KAs</i>						
		Length of comprehensive examination increment addressing the fatigue-related KAs	HOURS examination-fatigue	0.08 hr		
		% of employees taking the challenge examination	PER examination	80%	Assumption	
<i>Annual costs per program for trainers to administer the comprehensive challenge examination</i>						
		Length of comprehensive examination increment addressing the fatigue-related KAs	HOURS examination-fatigue	0.08 hr		
		Hours of examination grading	HOURS grading	0.08 hr		
		% of employees taking the challenge examination	PER examination	80%	Assumption	
<i>Pre-Order Baseline: One-time cost per program associated with revising the training program</i>						
		Hours of FFD program manager time per program to make knowledge and abilities revisions to training program	HOURS trainer	12.0 hr	Assumption	
		Hours of training manager time per program to review knowledge and abilities revisions to training program	HOURS training manager	2.0 hr	Assumption	
		Hours of FFD program manager time per program to review knowledge and abilities revisions to training program	HOURS ffd manager	2.0 hr	Assumption	
		Hours of clerical personnel time to support training program revisions process	HOURS clerical	4.0 hr	Assumption	
<i>Pre-Order Baseline: One-time cost per program for employees not previously trained at the supervisory level to take updated supervisory-level training and a comprehensive examination</i>						
		No additional parameters				
<i>Pre-Order Baseline: One-time cost per program for trainers to administer supervisory-level training on those employees not previously trained at the supervisory level</i>						
		Hours of training preparation and examination grading	HOURS preparation	2.0 hr	Assumption	
<i>Pre-Order Baseline: Annual cost per program for incoming employees to take the longer supervisory-level training course</i>						
		Length of supervisory-level training	HOURS supervisory	4.00 hr	Assumption	
		Length of non-supervisory-level training	HOURS non-supervisory	2.00 hr	Assumption	
<i>Pre-Order Baseline: Annual cost per program for trainers to administer the longer supervisory-level training course on incoming employees</i>						
		Length of supervisory-level training	HOURS supervisory	4.00 hr	Assumption	
		Length of non-supervisory-level training	HOURS non-supervisory	2.00 hr	Assumption	
		Hours of training preparation and examination grading	HOURS preparation	2.00 hr	Assumption	
<i>Pre-Order Baseline: Annual cost per program for employees to take the longer supervisory-level refresher training</i>						
		% of employees taking the refresher training course	PER refresher	20%	Assumption	
		Length of supervisory-level refresher training	HOURS supervisory	4.0 hr	Assumption	
		Length of non-supervisory-level refresher training	HOURS non-supervisory	2.0 hr	Assumption	
<i>Pre-Order Baseline: Annual cost per program for trainers to administer the longer supervisory-level refresher training</i>						
		% of employees taking the refresher training course	PER refresher	20%	Assumption	
		Length of supervisory-level refresher training	HOURS supervisory	1.5 hr	Assumption	
		Length of non-supervisory-level refresher training	HOURS non-supervisory	2.0 hr	Assumption	
<b>Urine and Alcohol Collector Training</b>					<b>Subpart E</b>	<b>26.85(a),(b)</b>
<i>One time cost per facility</i>						
		Number of collectors per collection site	NUM collectors	4	Assumption	
		Duration of training course	HOURS collector training	8.0 hr	Assumption	
		Number of training courses per facility	NUM courses per facility	1	Assumption	
		On-site Training of Collection Personnel, supplied by commercial vendor	COST training course	\$ 1,000	Assumption	
<b>Initial Validity Testing - Onsite Licensee Testing Facilities</b>					<b>Subpart F</b>	<b>26.131(b)</b>
<i>One time cost per onsite licensee testing facility</i>						
		Number of laboratory technicians per licensee testing facility	NUM technicians	4	Assumption	
		Duration of training course	HOURS technician training	4.0 hr	Assumption	
		Number of training courses per licensee testing facility	NUM courses per facility	1	Assumption	
		Cost per training course	COST training course	\$ 500.00	Assumption	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section	
<b>Comprehensive Examination</b>						<b>Subpart B</b>	<b>26.29(b)</b>
<b>These parameters are used in the equations below:</b>							
		% employees failing exam	PER failing	10%	Assumption		
		% of employees trained at the non-supervisory level under the former rule	PER non-supervisory	85%	Assumption		
		Length of remedial supervisory-level training	HOURS remedial	0.75 hr	Assumption		
<i>One-time cost per program for employees to take remedial training after failing the initial comprehensive examination when updating their training</i>							
			No additional parameters				
<i>One-time cost per program for trainers to administer remedial training on those employees who fail the initial comprehensive examination when updating training</i>							
			No additional parameters				
<i>Annual cost per program for applicants to take remedial training after failing the initial comprehensive examination</i>							
			No additional parameters				
<i>Annual cost per program for trainers to administer remedial training on applicants who fail the initial comprehensive examination</i>							
			No additional parameters				
<b>Comprehensive Examination in Lieu of Refresher Training</b>						<b>Subpart B</b>	<b>26.29(c)(2)</b>
<b>These parameters are used in the equations below:</b>							
		% of employees choosing to take comprehensive refresher exam in lieu of refresher training	PER examination	80%	Assumption		
		Length of comprehensive examination	HOURS exam	0.5 hr	Assumption		
		Trainer time to prepare for training course	HOURS preparation	1.0 hr	Assumption		
		Trainer time to prepare for exam and grade	HOURS grading	0.5 hr	Assumption		
<i>Annual savings per program for those employees choosing to take the shorter comprehensive examination in lieu of non-supervisory-level refresher training</i>							
		% of employees trained at the non-supervisory level under the former rule	PER non-supervisory	85%	Assumption		
		Length of non-supervisory-level refresher training	HOURS non-supervisory	2.0 hr	Assumption		
<i>Annual savings per program for those employees choosing to take the shorter comprehensive examination in lieu of supervisory-level refresher training</i>							
		% of employees trained at the supervisory-level under the former rule	PER supervisory	15%	Assumption		
		Length of supervisory-level refresher training	HOURS supervisory	4.0 hr	Assumption		
<i>Annual savings per program from reduced training costs due to employees choosing to take the shorter comprehensive examination in lieu of non-supervisory-level refresher training.</i>							
		% of employees trained at the non-supervisory-level under the former rule	PER non-supervisory	85%	Assumption		
		Length of non-supervisory-level refresher training	HOURS non-supervisory	2.0 hr	Assumption		
<i>Annual savings per program from reduced training costs due to employees choosing to take the shorter comprehensive examination in lieu of supervisory-level refresher training.</i>							
		% of employees trained at the supervisory-level under the former rule	PER supervisory	15%	Assumption		
		Length of supervisory-level refresher training	HOURS supervisory	4.0 hr	Assumption		
<b>NRC Implementation - One-time Training</b>							
<i>Cost to develop NRC staff training workshop</i>							
		Hours of NRC staff time to develop training workshop curriculum and materials	NRC Staff Hours	40.0 hr	Assumption		
<i>Cost to train NRC staff from Rockville Headquarters</i>							
		Hours to train NRC staff reviewers and inspectors	NRC HQ Staff Hours	24 hr	Assumption		
		Number of local NRC staff participating in training (including instructor)	NUM NRC HQ staff	3	Assumption		
<i>Cost to train NRC staff from regional NRC offices</i>							
		Hours to train NRC staff reviewers and inspectors	HOUR training	24 hr	Assumption		
		Cost of roundtrip travel	COST travel	\$500	Assumption		
		Cost of lodging and per diem per night	COST lodging & food	\$150	Assumption		
		Number of nights of lodging for auditor to complete focused audit	NUM nights hotel	3	Assumption		
		Hours of roundtrip auditor travel per audit	HOURS travel	8 hr	Assumption		
		Number personnel from NRC regional offices	NUM NRC regional staff	4	Assumption		

**Exhibit A2 - 4**

**Audits, Inspections, Certifications and Corrective Action**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Audit Frequency</b>					<b>Subpart B</b>	<b>26.41(b)</b>
<i>These parameters are used in the equations below:</i>						
		% multiplier to yield annualized savings	PER annualized	50.0%	Calculated	
		Cost of roundtrip travel	COST travel	\$300	Assumption	
		Cost of lodging and per diem per night	COST lodging	\$150	Assumption	
<i>Annual base saving per program from the reduced audit frequency</i>						
		Contracted auditor hours at facility with offsite collection and testing	HOURS auditor-base	25.0 hr	NRC staff estimate	
		FFD program manager hours at facility with offsite collection and testing	HOURS manager-base	13.0 hr	NRC staff estimate	
		Clerical personnel hours at facility with offsite collection and testing	HOURS clerical-base	5.0 hr	NRC staff estimate	
<i>Additional annual savings per program from audit frequency reduction that accrue to programs with onsite testing</i>						
		Contracted auditor hours saved at facility with onsite testing	HOURS auditor-onsite collection	12.0 hr	NRC staff estimate	
		FFD program manager hours saved at facility with onsite testing	HOURS manager-onsite collection	7.0 hr	NRC staff estimate	
		Clerical personnel hours saved at facility with onsite testing	HOURS clerical-onsite collection	0.0 hr	NRC staff estimate	
		Laboratory manager hours saved at facility with onsite testing	HOURS laboratory manager	5.0 hr	NRC staff estimate	
		Laboratory staff hours saved at facility with onsite testing	HOURS laboratory staff	2.0 hr	NRC staff estimate	
<i>Additional annual savings per program from audit frequency reduction that accrue to programs with onsite collection</i>						
		Contracted auditor hours saved at facility with onsite collection	HOURS auditor-onsite testing	5.0 hr	NRC staff estimate	
		FFD program manager hours saved at facility with onsite collection	HOURS manager-onsite testing	0.0 hr	NRC staff estimate	
		Clerical personnel hours saved at facility with onsite collection	HOURS clerical-onsite testing	0.0 hr	NRC staff estimate	
		Collection manager hours saved at facility with onsite collection	HOURS collection manager	2.0 hr	NRC staff estimate	
		Collection staff hours saved at facility with onsite collection	HOURS collection staff	1.0 hr	NRC staff estimate	
		Percentage of facilities with onsite collection per program		95.0%	Assumption	
<i>Base annual savings per program from reduced audit frequency</i>						
		Base number of auditors per program audit	NUM auditors-base	1	Assumption	
		Number of auditor overnights saved at facility with offsite collection and offsite testing	NUM nights-base	3	NRC staff estimate	
		Contracted auditor hours traveling	HOURS travel	4.0 hr	Assumption	
<i>Additional annual savings per program that accrue due to reduced auditor travel to facilities with onsite testing laboratories</i>						
		Additional number of auditors per program with onsite testing laboratories	NUM auditors-onsite testing	1	Assumption	
		Additional number of overnights per program with onsite testing	NUM nights-onsite testing	1	NRC staff estimate	
<i>Additional annual savings per program that accrue due to reduced auditor travel to facilities with onsite collection facilities</i>						
		Additional number of auditors per program with onsite collection facilities	NUM auditors-onsite collection	0	Assumption	
		Additional number of overnights per program with onsite collection	NUM nights-onsite collection	0	NRC staff estimate	
<i>Annual cost per program to conduct focused audits addressing problem areas of the FFD program</i>						
		Hours of contracted auditor time conducting a focused audit	HOURS auditor	4.0 hr	NRC staff estimate	
		Hours of FFD program manager time during a focused audit	HOURS manager	3.0 hr	NRC staff estimate	
		Hours of clerical personnel time during a focused audit	HOURS clerical	1.0 hr	NRC staff estimate	
		Number of auditors per program audit	NUM auditors	2	Assumption	
		Cost of lodging and per diem per night	COST lodging	\$ 150.00	Assumption	
		Cost of roundtrip travel	COST travel	\$ 300.00	Assumption	
		Number of nights of lodging for auditor to complete focused audit	NUM nights-focused	1	NRC staff estimate	
		Hours of roundtrip auditor travel per audit	auditor travel time	4.0 hr	Assumption	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Elimination of Audit Duplication of HHS-Certified Laboratories</b>					<b>Subpart B</b>	<b>26.41(c)(2)</b>
		<i>Annual savings per program from eliminating audit duplication</i>				
		Hours of contracted auditor time saved annually per program in elimination of audit duplication	HOURS auditor	7.0 hr	Assumption	
		Hours of FFD program manager time saved annually in elimination of audit duplication	HOURS manager	4.0 hr	Assumption	
		Hours of clerical personnel time saved annually in elimination of audit duplication	HOURS clerical	1.0 hr	Assumption	
<b>Forensic Toxicologist Review of More Stringent Cutoff Levels</b>					<b>Subpart B</b>	<b>26.31(d)(3)</b>
		<i>One time cost per program to employ more stringent cutoff level(s) for drugs</i>				
		Hours of review by forensic toxicologist of more stringent cut-off levels for drug testing	HOURS toxicologist	3.5 hr	Assumption	
		Hours of time for the forensic toxicologist to produce a certification statement regarding the more stringent cut-off levels	HOURS certification	0.5 hr	Assumption	
		Percentage of FFD programs that use more stringent cut-off levels for drug testing	PER more stringent cutoffs	10%	Assumption	
		Percentage of FFD programs who use more stringent cut-off levels for drug testing, but have not reported to the Commission	PER non-report	25%	Assumption	
		Hours of time spent by FFD program manager to review the results of the forensic toxicologist's evaluation per FFD program	HOURS manager	0.5 hr	Assumption	
<b>Pre-Award Inspections of HHS-Certified Laboratories</b>					<b>Subpart G</b>	<b>26.153(e)</b>
		<i>Annual costs per FFD program</i>				
		Hours per pre-award inspection for an HHS-certified lab conducted by licensee personnel or a designate	HOURS inspection	100 hr	Discussion with NEI staff, May 23, 2003	
		Percentage of FFD programs that must change to a new HHS lab because their current HHS-lab loses HHS certification	PER decertification	10%	Assumption	
		Percentage of instances in which a replacement HHS-certified lab is being used by another FFD program (a "known" HHS lab)	PER known	50%	Assumption	



**Exhibit A2 - 5  
Authorizations**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Initial Authorization</b>						
<b>Self-Disclosure for Initial Applicants</b>					<b>Subpart C</b>	<b>26.55(a)(1)</b>
<i>Pre-Order Baseline: Annual savings per program from reduced facility worker labor burden for those initial applicants who qualify for the self-disclosure relaxation</i>						
		% of applicants for initial authorization qualifying for relaxation	PER qualifying	50%	Assumption	
		Facility worker hours saved in foregone self-disclosure	HOURS worker	0.25 hr	NRC staff estimate	
<i>Pre-Order Baseline: Annual savings per program from reduced clerical personnel labor burden because fewer self-disclosures submitted by initial applicants need to be processed</i>						
		% of applicants for initial authorization qualifying for relaxation	PER qualifying	50%	Assumption	
		Clerical personnel hours saved in foregone self-disclosure	HOURS clerical	0.25 hr	NRC staff estimate	
<b>Suitable Inquiry for Initial Applicants</b>					<b>Subpart C</b>	<b>26.55(a)(2)</b>
<i>Pre-Order Baseline: Annual savings per program from not conducting the suitable inquiry on initial applicants qualifying for relaxation</i>						
		% of applicants for initial authorization qualifying for relaxation	PER qualifying	50%	Assumption	
		HR personnel hours saved in exempted suitable inquiry under the former rule, but prior to the AAO	HOURS hr	1.0 hr	NRC staff estimate	
<i>Pre-Order Baseline: Annual savings per program due to reduced suitable inquiry coverage period and scope for those applicants qualifying for the relaxation</i>						
		HR personnel hours saved due to reduced suitable inquiry coverage period and a reduction in the number of employers that must be contacted	HOURS hr	0.5 hr	NRC staff estimate	
		% of applicants for initial authorization per year who do not qualify for the relaxation under subparagraph 23.63(a) in the final rule	PER not qualifying	50%	Assumption	
		% of initial applicants who have no potentially disqualifying FFD information to disclose	PER non-PDFFDI	95%	Assumption	
<i>Industry Practices: Annual cost per program to conduct a more thorough suitable inquiry on applicants for initial authorization to comply with the former rule</i>						
		Additional HR personnel hours required to conduct a suitable inquiry compliant with former rule	HOURS hr	0.2 hr	Assumption	
<b>Pre-Access Testing for Initial Applicants</b>					<b>Subpart C</b>	<b>26.55(a)(3)</b>
<i>Pre-Order Baseline: Annual savings per program from not administering a pre-access drug and alcohol test on initial applicants covered by a behavioral observation and arrest-reporting program throughout the period of interruption</i>						
		% applicants of applicants for initial authorization qualifying for pre-access drug test relaxation	PER qualifying	25%	Assumption	
<i>Pre-Order Baseline: Annual savings per program from bypassing required worker labor in the administration of a pre-access drug and alcohol tests for initial applicants covered by a behavioral observation and arrest-reporting</i>						
		Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption	
		Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption	
		% of initial applicants qualifying for pre-access drug test relaxation	PER qualifying	25%	Assumption	
<b>Random Testing Pool for Initial Applicants</b>					<b>Subpart C</b>	<b>26.55(a)(4)</b>
<i>Annual costs per program from the implementation of a random drug and alcohol testing program on initial applicants in applicant status</i>						
		% of initial applicants selected for random drug and alcohol testing	PER random	1%	Assumption	
<b>Authorization Updates</b>						
<b>Self Disclosure for Update Applicants</b>					<b>Subpart C</b>	<b>26.57(a)(1)</b>
<i>Pre-Order Baseline: Annual savings per program from reduced facility worker labor burden for those applicants for updated authorization who qualify for the self-disclosure relaxation</i>						
		% of applicants for authorization updates qualifying for relaxation	PER qualifying	50%	Assumption	
		Facility worker hours saved in foregone self-disclosure	HOURS worker	0.25 hr	NRC staff estimate	
<i>Pre-Order Baseline: Annual savings per program from reduced clerical personnel labor burden because fewer self-disclosures submitted by applicants for updated authorization will need to be processed</i>						
		% of applicants for authorization updates qualifying for relaxation	PER qualifying	50%	Assumption	
		Clerical personnel hours saved in foregone self-disclosure	HOURS clerical	0.25 hr	NRC staff estimate	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section	
<b>Suitable Inquiry for Update Authorization</b>						<b>Subpart C</b>	<b>26.57(a)(2)</b>
<i>Pre-Order Baseline: Annual savings per program from not conducting the suitable inquiry on applicants for updated authorization qualifying for the relaxation</i>							
		% of applicants for authorization updates qualifying for relaxation	PER qualifying	50%	Assumption		
		HR personnel hours saved in exempted suitable inquiry under the former rule, but prior to the AAO	HOURS hr	1.0 hr	NRC staff estimate		
<i>Pre-Order Baseline: Annual savings per program due to reduced suitable inquiry coverage period and scope for applicants for updated authorization qualifying for the relaxation</i>							
		% of applicants for updated authorization not qualifying for relaxation	PER non qualifying	50%	Assumption		
		% of applicants for updated authorization who have no potentially disqualifying FFD information to disclose	PER non-PDFDI	98%	Assumption		
		HR personnel hours saved due to reduced suitable inquiry coverage period and a reduction in the number of employers that must be contacted	HOURS hr	0.5 hr	NRC staff estimate		
<i>Industry Practices: Annual cost per program to conduct a more thorough suitable inquiry on applicants for updated authorization to comply with the former rule</i>							
		Additional HR personnel hours required to conduct a suitable inquiry compliant with former rule	HOURS hr	0.2 hr	Assumption		
<b>Pre-Access Testing for Update Applicants</b>						<b>Subpart C</b>	<b>26.57(a)(3)</b>
<i>Pre-Order Baseline: Annual savings per program from not administering a pre-access drug and alcohol test on update applicants covered by a behavioral observation and arrest-reporting program throughout the period of interruption</i>							
		% applicants for authorization updates qualifying for pre-access drug test relaxation	PER qualifying	25%	Assumption		
<i>Pre-Order Baseline: Annual savings per program from bypassing required worker labor in the administration of a pre-access drug and alcohol tests for update applicants covered by a behavioral observation and arrest-reporting</i>							
		Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption		
		Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption		
		% applicants for authorization updates qualifying for pre-access drug test relaxation	PER qualifying	25%	Assumption		
<b>Random Testing Pool for Update Applicants</b>						<b>Subpart C</b>	<b>26.57(a)(4)</b>
<i>Annual costs per program from the implementation of a random drug and alcohol testing program on update applicants in applicant status</i>							
		% of initial applicants selected for random drug and alcohol testing	PER random	1%	Assumption		
<b>Authorization Reinstatements with Interruptions</b>							
<b>Self-Disclosure for Reinstatement Applicants with 31-365 Day Interruption</b>						<b>Subpart C</b>	<b>26.59(a)(1)</b>
<i>Pre-Order Baseline: Annual savings per program from reduced facility worker labor burden for those applicants for authorization reinstatement who qualify for the self-disclosure relaxation</i>							
		Facility worker hours saved in foregone self-disclosure	HOURS worker	0.25 hr	NRC staff estimate		
		% of applicants for authorization reinstatement qualifying for self-disclosure relaxation	PER qualifying	50%	Assumption		
<i>Pre-Order Baseline: Annual savings per program from reduced clerical personnel labor burden because fewer self-disclosures submitted by applicants for authorization reinstatement will need to be processed</i>							
		Clerical personnel hours saved in foregone self-disclosure	HOURS clerical	0.25 hr	NRC staff estimate		
		% of applicants for authorization reinstatement qualifying for self-disclosure relaxation	PER qualifying	50%	Assumption		
<b>Suitable Inquiry for Reinstatement Applicants with 31-365 Day Interruption</b>						<b>Subpart C</b>	<b>26.59(a)(2)</b>
<i>Pre-Order Baseline: Annual savings per program from not conducting the suitable inquiry on applicants for authorization reinstatement qualifying for the relaxation</i>							
		HR personnel hours saved in exempted suitable inquiry under the former rule, but prior to the AAO	HOURS hr	1.0 hr	NRC staff estimate		
		% of applicants qualifying for the suitable inquiry relaxation	PER qualifying	50%	Assumption		
<i>Pre-Order Baseline: Annual savings per program due to reduced suitable inquiry coverage period and scope for applicants for authorization reinstatement qualifying for the relaxation</i>							
		HR personnel hours saved due to reduced suitable inquiry coverage period and a reduction in the number of employers that must be contacted	HOURS hr	0.5 hr	NRC staff estimate		
		% of applicants not qualifying for the suitable inquiry relaxation	PER covered	50%	Assumption		
		% of update applicants who have no potentially disqualifying FFD information to disclose on their self-disclosures	PER non-pdffdi	99%	Assumption		
<i>Industry Practices: Annual cost per program to conduct a more thorough suitable inquiry on applicants for authorization reinstatement to comply with the former rule</i>							
		Additional HR personnel hours required to conduct a suitable inquiry compliant with former rule	HOURS hr	0.2 hr	Assumption		

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Pre-Access Testing for Reinstatement Applicants with 31-365 Day Interruption</b>					<b>Subpart C</b>	<b>26.59(a)(3)</b>
<i>Pre-Order Baseline: Annual savings per program from allowing reinstatement applicants covered by a random drug and alcohol testing program throughout the period of interruption to forego pre-access drug and alcohol testing</i>						
		% of applicants for authorization reinstatement covered by a random drug and alcohol testing program	PER qualifying	25%	Assumption	
<i>Pre-Order Baseline: Annual savings per program from reducing the number of hours of lost worker productivity for reinstatement applicants covered by both a random drug and alcohol testing program and a behavioral observation and arrest reporting program</i>						
		Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption	
		Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption	
		% of applicants for authorization reinstatement covered by a random drug and alcohol testing program	PER qualifying	25%	Assumption	
<i>Pre-Order Baseline: Annual savings per program resulting from this group of applicants not having to await verification of negative results before granting authorization</i>						
		Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption	
		Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption	
		% of applicants for authorization reinstatement not covered by a random drug and alcohol testing program	PER not qualifying	75%	Assumption	
<b>Random Testing Pool for Reinstatement Applicants with 31-365 Day Interruption</b>					<b>Subpart C</b>	<b>26.59(a)(4)</b>
<i>Annual costs per program to conduct random drug and alcohol tests on applicants randomly selected while awaiting the granting of authorization</i>						
		% of initial applicants selected for random drug and alcohol testing	PER random	1%	Assumption	
<b>Self-Disclosure (and Suitable Inquiry) for Reinstatement Applicants with Less than 31 Day Interruption</b>					<b>Subpart C</b>	<b>26.59(c)(1)</b>
<i>Pre-Order Baseline: Annual savings per program from reduced facility worker labor burden for those applicants for authorization reinstatement who qualify for the self-disclosure relaxation</i>						
		% of reinstatement applicants qualifying for relaxation	PER qualifying	50%	Assumption	
		Facility worker hours saved in foregone self-disclosure	HOURS worker	0.25 hr	NRC staff estimate	
<i>Pre-Order Baseline: Annual savings per program from reduced clerical personnel labor burden because fewer self-disclosures submitted by applicants for authorization reinstatement will need to be processed</i>						
		% of reinstatement applicants qualifying for relaxation	PER qualifying	50%	Assumption	
		Clerical personnel hours saved in foregone self-disclosure	HOURS clerical	0.25 hr	NRC staff estimate	
<i>Pre-Order Baseline: Annual savings per program from not conducting suitable inquiries on applicants for authorization reinstatement with an interruption of not more than 30 days</i>						
		HR personnel hours saved in exempted suitable inquiry under the former rule, but prior to the AAO	HOURS hr	1.0 hr	NRC staff estimate	
<i>Industry Practices: Annual cost per program for applicants for authorization reinstatement with interruptions of not more than 30 days to submit self-disclosures to comply with self-disclosure requirements</i>						
		Facility worker hours required to complete and submit self-disclosure	HOURS worker	0.25 hr	NRC staff estimate	
		% cost applied to each program	PER cost	50%	Assumption	
<i>Industry Practices: Annual cost per program for clerical personnel to process additional self-disclosures for applicants for authorization reinstatement with interruptions of not more than 30 days to comply with self-disclosure requirements</i>						
		Clerical personnel hours required to process received self-disclosures	HOURS clerical	0.25 hr	NRC staff estimate	
		% cost applied to each program	PER cost	50%	Assumption	
<i>Industry Practices: Annual cost per program to conduct suitable inquiries on applicants for authorization reinstatement with an interruption of not more than 30 days to comply with the former rules</i>						
		Additional HR personnel hours required to conduct a suitable inquiry as required by former rule	HOURS hr	1.0 hr	NRC staff estimate	
		% cost applied to each program	PER cost	50%	Assumption	
<i>Industry Practices: Annual cost per program to conduct a more thorough suitable inquiry on applicants for authorization reinstatement with an interruption of not more than 30 days to comply with the former rule</i>						
		Additional HR personnel hours required to conduct a suitable inquiry compliant with former rule	HOURS hr	0.2 hr	Assumption	

Pre-Access Testing for Reinstatement Applicants with Less than 31 Day Interruption		Subpart C	26.59(c)(2)
<i>Pre-Order Baseline: Annual savings per program from not administering a pre-access drug and alcohol test on applicants for authorization reinstatement with an interruption of 5 days or less</i>			
No additional Parameters	No Parameters		
<i>Pre-Order Baseline: Annual savings per program from bypassing worker labor in the administration of a pre-access drug and alcohol test for authorization reinstatements with an interruption of 5 days or less</i>			
Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption
Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption
<i>Pre-Order Baseline: Annual savings per program from allowing reinstatement applicants who have been covered by a behavioral observation and arrest-reporting program throughout the period of interruption to forego the pre-access drug and alcohol test</i>			
% of applicants qualifying for the relaxation	PER covered	50%	Assumption
<i>Pre-Order Baseline: Annual savings per program from bypassing required worker labor in the administration of a pre-access drug and alcohol tests for reinstatement applicants who have been covered by a behavioral observation and</i>			
% of applicants qualifying for the relaxation	PER covered	50%	Assumption
Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption
Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption
<i>Pre-Order Baseline: Annual savings per program from allowing reinstatement applicants who have not been covered by a behavioral observation and arrest-reporting program throughout the period of interruption but who have not been randomly selected for pre-access testing to forego the pre-access drug and alcohol test</i>			
% of applicants not qualifying for the relaxation	PER not covered	50%	Assumption
% of applicants subject to random testing but not selected	PER not selected	98%	Assumption
<i>Pre-Order Baseline: Annual savings per program from reducing the number of hours of lost worker productivity for reinstatement applicants who are not covered and are not selected for random pre-access drug and alcohol testing</i>			
% of applicants not qualifying for the relaxation	PER not covered	50%	Assumption
% of applicants subject to random testing but not selected	PER not selected	98%	Assumption
Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption
Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption
<i>Industry Practices: Annual cost per program to comply with existing pre-access drug and alcohol testing provisions</i>			
Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption
Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption
% of cost applied to a given program due to non-compliance	PER compliance	50%	Assumption
<i>Industry Practices: Annual cost per program of increased lost worker productivity awaiting negative test result verification to comply with existing pre-access drug and alcohol testing provisions</i>			
Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption
Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption
% of cost applied to a given program due to non-compliance	PER compliance	50%	Assumption
Random Testing Pool for Reinstatement Applicants with Less than 31 Day Interruption		Subpart C	26.59(c)(3)
<i>Annual costs per program to subject applicants for authorization reinstatement to one-time random selection for a pre-access drug and alcohol test</i>			
% rate of random test selection	PER randomly selected	2%	Assumption
% rate of random test selection	PER randomly selected	1%	Assumption
<i>Annual costs per program from reduced labor productivity to subject applicants for authorization reinstatement to one-time random selection for a pre-access drug and alcohol test</i>			
% rate of random test selection	PER random	2%	Assumption
Facility worker hours saved at facility with onsite testing laboratory	HOURS onsite	4.0 hr	Assumption
Facility worker hours saved at facility with offsite testing laboratory	HOURS offsite	8.0 hr	Assumption

Exhibit A2 - 6						
Activities Related to Potential Policy Violations						
Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Reasonable Effort to Track Randomly Selected Individuals for Testing</b>					<b>Subpart B</b>	<b>26.31(d)(2)</b>
<i>Annual costs per program from requiring greater effort to track individuals selected for random drug and alcohol testing</i>						
		% tested by a random drug program per year	PER random	50.0%	Rule requirement	
		% of randomly selected employees per year that are unavailable for the scheduled test	PER unavailable	25%	Assumption	
		Hours of FFD program manager tracking time per randomly selected employee unavailable for the scheduled test	HOURS manager	0.25 hr	Assumption	
<b>Behavioral Observation</b>					<b>Subpart B</b>	<b>26.33</b>
<b>This parameter is used in the equations below:</b>						
		% increase in for-cause tests/referrals per year	PERI for-cause	10%	Assumption	
<i>Annual cost per program to review additional for-cause referrals</i>						
		Hours of FFD program manager review per for-cause referral	HOURS manager	4.0 hr	Assumption	
		Hours of facility worker hours under review per for-cause referral	HOURS worker	4.0 hr	Assumption	
<i>Annual cost per program to conduct additional drug and alcohol tests due to increased for-cause referrals</i>						
			No additional parameters			
<i>Annual cost per program to conduct additional pre-access drug and alcohol tests yielding positive results due to increased for-cause referrals</i>						
			No additional parameters			
<i>Annual cost per program to retest confirmed positive drug test results at a second HHS-certified laboratory at the request of the donor</i>						
		Percentage of urine specimens with confirmed positive, adulterated, substituted, dilute, or PER retest invalid validity and/or drug test results retested at the request of the donor at a second HHS-certified laboratory		5%	Assumption	
<i>Annual costs per program for the percentage of workers with confirmed positive test results who initiate an appeals process</i>						
		Percentage of workers with confirmed positive test results that initiate appeals process	PER appeals	1%	Assumption	
<b>Disclosure requirements positive test results</b>					<b>Subpart B</b>	<b>26.37(d)</b>
<i>Annual costs per program to provide individuals with easier access to personal documents</i>						
		% of employees with positive test results who request records	PER requesting	50%	Assumption	
		Additional clerical personnel hours copying, packaging, and shipping records per disclosure request	HOURS clerical	1.0 hr	Assumption	
		Cost of mailing (express mail) one performance data report to each licensee	COSTMailing	\$ 10.00	Assumption	
<b>Review of FFD Policy Violations</b>					<b>Subpart B</b>	<b>26.39(c)</b>
<i>Annual cost per program to require FFD policy violations to be reviewed by more than one individual both of whom must be unaffiliated with FFD program administration</i>						
		Additional hours of non-FFD manager review of FFD policy violations	HOURS manager	4.0 hr	Assumption	
<b>Definition of "Potentially Disqualifying Information"</b>					<b>Subpart H</b>	<b>26.189(b)(3)</b>
<b>These parameters are used in the equations below:</b>						
		% of applicants for authorization requiring a determination of fitness based on potentially disqualifying FFD information under the former rule	PER PDFFDI-former	10%	Assumption	
		% of applicants for authorization requiring a determination of fitness based on potentially disqualifying FFD information under the final rule	PER PDFFDI-final	5%	Assumption	
<i>Annual savings per program from the reduction in the number of determinations of fitness requiring SAE review</i>						
		SAE hours of review per determination of fitness	HOURS sae	2.0 hr	Assumption	
<i>Annual savings per program from the reduction in the number of determinations of fitness requiring FFD program manager review</i>						
		FFD program manager hours of review per determination of fitness	HOURS manager	2.0 hr	Assumption	
<i>Annual savings per program from the reduction in the number of determinations of fitness requiring clerical personnel support</i>						
		Clerical personnel hours to support determination of fitness	HOURS clerical	2.0 hr	Assumption	
<b>Face-to-Face Determinations of Fitness</b>					<b>Subpart H</b>	<b>26.189(c)</b>
<i>Annual costs per program from requiring that a determination of fitness that is conducted for-cause be conducted face-to-face with the individual under review</i>						
		Hours of worker time required per face-to-face determination of fitness	HOURS worker	2.0 hr	Assumption	

**Exhibit A2 - 7**  
**Urine Specimen Collections**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section	
<b>Urine Collection: Donors Without Adequate ID</b>						<b>Subpart E</b>	<b>26.89(b)(2)</b>
<i>Annual savings per FFD program per year</i>							
		Percentage of individuals without identification	PER no-ID	1.0%	Assumption		
		Time a donor without ID would spend to leave the collection site, obtain appropriate ID, and return to the collection site to be drug and alcohol tested	HOURS worker	0.75 hr	Assumption		
<b>Urine Collection: Eliminate Listing Medications on the CCF Form and add description of testing process</b>						<b>Subpart E</b>	<b>26.89(b)(3)</b>
<i>Annual savings per FFD program per year</i>							
		Time per collection to list medications on CCF	HOURS saved	0.033 hr	Assumption		
		Time per collection for collector to explain testing process to donor	HOURS added	0.013 hr			
<b>Urine Collection: Inspecting Contents of Donor's Pockets</b>						<b>Subpart E</b>	<b>26.105(b)</b>
<i>Annual costs per FFD program per year</i>							
		Time to inspect contents of a donors pockets per test	HOURS inspection	0.033 hr	Assumption		
<b>Urine Specimen Quantity: Minimum Quantity of 30 mL</b>						<b>Subpart E</b>	<b>26.109(a)</b>
<i>Annual savings per FFD program</i>							
		Percentage of collections considered to be of inadequate quantity under the former requirements	PER low quantity	6.7%	4.22.03 Wall Street Journal article, see RA		
		Percentage decrease in the number of inadequate specimens resulting from reduction in the minimum specimen quantity from 60 mL to 30 mL	PERD low quantity	25.0%	Assumption		
		Time per test saved because donor can provide a sufficient specimen under the new rule	HOURS saved	1.50 hr	Assumption		
<b>Urine Specimen: At Least 30 mL, but Less than Predetermined Quantity</b>						<b>Subpart E</b>	<b>26.109(b)(2)</b>
<i>Annual costs per FFD program with onsite testing facility</i>							
		Percentage of urine specimens at least 30 mL in volume, but less than the licensee or C/Vs predetermined quantity of urine	PER not predetermined quantity	1.0%	Assumption		
<b>Shy Bladder Medical Evaluation</b>						<b>Subpart E</b>	<b>26.119</b>
<i>Annual costs per FFD program</i>							
		Number of urine collections unable to be completed because of inadequate specimen volume per facility per year	NUM shy bladder	1	Assumption		
		Cost of a medical evaluation and written report from a licensed physician (per shy bladder COST medical evaluation event)		\$ 300.00	Assumption		
		Time per medical evaluation (including travel to and from the physician's office)	HOURS medical evaluation	1.50 hr	Assumption		
		Time for a FFD manager per incident where an employee is unable to provide the minimum quantity of urine after 3 hours	HOURS FFD manager	2.0 hr	Assumption		
		MRO time to select a physician, instruct the physician on the medical evaluation that must be conducted, and review and communicate the medical evaluation results	HOURS MRO	2.0 hr	Assumption		

**Exhibit A2 - 8  
Alcohol Testing**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Blood Collection for Confirmatory Alcohol Testing</b>						<b>Subpart E</b>
<i>Annual savings per FFD program per year</i>						
		Number of blood tests per FFD program per year	NUM blood	1	NEI data	
		Hours MRO to review test result & communicate with employee and donor	HOURS mro	0.75 hour	Assumption	
		Hours lost worker productivity resulting from receiving a blood test	HOURS worker	0.75 hour	Assumption	
<b>Purchase of EBT and Calibration Equipment and Related Training</b>						<b>Subpart E</b>
<b>This parameter is used in the equations below:</b>						
		Percentage of collection sites that will purchase an EBT meeting the specifications in paragraph 26.91(c).	PER purchased	50%	Assumption	
<i>One time equipment purchases per facility</i>						
		Number of compliant EBTs purchased per collection site	NUM EBTs	2	Assumption	
<i>One time training cost per facility</i>						
		Cost of alcohol collector training course on purchased EBT	COST training course	\$ 250	Assumption	
		Number of alcohol collectors per collection site	NUM collectors	4		
		Length of alcohol collector training course	HOURS collector training	2 hours	Assumption	
<b>Required Use of an EBT on the NHTSA CPL for Confirmatory Testing</b>						<b>Subpart E</b>
<i>Annual savings per FFD program per year</i>						
		Time per test to set-up a second EBTs (locate the EBT, turn on the equipment) to conduct confirmatory testing	HOURS saved	0.033 hour	Assumption	
		Percentage of collections sites that will use a compliant EBT for all collections	PER compliant, final rule	50%	Assumption	
<b>One Breath Specimen Collection for Initial Alcohol Test</b>						<b>Subpart E</b>
<i>Annual savings per FFD program per year</i>						
		Savings in collection time from one fewer breath collection per breath test	HOURS breath collection	0.033 hour	Assumption	
<b>Lowering Initial BAC Requiring Confirmatory Test to BAC 0.02</b>						<b>Subpart E</b>
<i>Annual costs per FFD program per year</i>						
		Percentage increase in number of initial positive alcohol tests under the lower screening level BAC	PERI IPAT	20%	Assumption	
		Time to conduct a confirmatory alcohol test under the final rule	HOURS CAT	0.05 hour	Assumption	
		Hours of FFD manager time associated with personnel activities and administrative actions resulting from a confirmed positive alcohol test result	HOURS FFD manager	2.5 hour	Assumption	
<b>FFD Manager Determines Confirmed Positive Test for Alcohol (BAC 0.02 &lt; 0.04)</b>						<b>Subpart E</b>
<i>Annual costs per FFD program per year</i>						
		% increase in the number of confirmed positive breath alcohol tests per FFD program under the BACs in the final rule	PERI CPAT	20%	Assumption. Note: this is the same rate as in 26.97(b) PERI IPAT	
		Time per test result for FFD manager to determine the length of time an employee has been in work for BACs equal to or greater than 0.02 and less than 0.4	HOURS FFD management	0.25 hour	Assumption	

**Exhibit A2 - 9**

**Drug and validity testing (licensee testing facilities and HHS-certified laboratories)**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Validity Testing (On-site Licensee Testing Facilities and HHS-Certified Laboratories)</b>					<b>Subpart F</b>	<b>26.131(b)</b>
					<b>Subpart G</b>	<b>26.161(b)(1)</b>
		<i>Cost to Conduct Daily Calibration Validity Testing Equipment at Onsite Licensee Testing Facility</i>				
		Number of days per year a licensee testing facility operates	NUMdays	365 days	Assumption	
		<i>Costs for confirmed positive drug tests and confirmed adulterated, substituted, or invalid validity test results</i>				
		Percentage of initial validity tests with dilute, adulterated, substituted, or invalid test results	PER dilute, adulterated, substituted, or invalid - initial validity testing	2.69%	Equals the sum of the percentage of dilute, adulterated, and invalid specimens - see Exhibit A2-12)	
		Percentage of Dilute Specimens drug positive at LOD testing	PER positive LOD	33%	Assumption	
		Percentage of initial Adulterated, Substituted (0-<2 mg/dL creatinine), and Invalid test results that remain adulterated, substituted, or invalid on confirmation	PER adulterated, substituted, Invalid confirmed	100%	Assumption	
		Percentage of specimens collected under direct observation as a result of an initial specimen with a confirmatory validity test result of invalid that test positive for drugs	PERdrug positive 2nd collection	33%	Assumption	
<b>Initial Validity Testing - Onsite Licensee Testing Facilities</b>					<b>Subpart F</b>	<b>26.131(b)</b>
		<b>This parameter is used in multiple equations in 26.131(b) calculations:</b>				
		Percentage of urine specimens with confirmed positive, adulterated, substituted, dilute, or PER retest invalid validity and/or drug test results retested at the request of the donor at a second HHS-certified laboratory		5.0%	Assumption	
		Percentage of workers with confirmed positive test results that initiate appeals process	PER appeals	1.0%	Assumption	
<b>Change Cutoff Levels for Marijuana and Opiates - Onsite Testing Facilities</b>					<b>Subpart F</b>	<b>26.133</b>
<b>Change Cutoff Levels for Marijuana and Opiates - HHS-Certified Laboratories</b>					<b>Subpart G</b>	<b>26.163(a)(1)</b>
		Percentage increase in marijuana positive drug tests resulting from reduced cutoff level in PERI marijuana new rule		40%	Assumption	
		Percentage decrease in opiate positive drug tests resulting from the increased cutoff level PERD opiate in the new rule		75%	Assumption	
<b>Quality Control Specimens in Each Analytical Run - Onsite Testing Facilities</b>					<b>Subpart F</b>	<b>26.137(e)(6)</b>
		<i>Annual costs per unit with onsite testing facilities</i>				
		Percentage cost increase per average urine specimen	PERI cost	10%	Assumption	
<b>Unidentified Interfering Substance/Adulterant - Contact MRO and Specimen Retesting</b>					<b>Subpart G</b>	<b>26.161(g)</b>
		<i>Annual costs per FFD program</i>				
		Number of urine specimens per facility per year suspected of having a new adulterant or interfering agent that could make a test result invalid that are sent to a second HHS-certified laboratory	NUM new adulterant	1	Assumption	
		Time per specimen for an MRO to speak with the HHS-certified laboratory and determine whether a specimen is to be retested at a second HHS-certified laboratory, and the time to review the results of validity testing at the second HHS-certified laboratory	HOURS MRO	0.50 hr	Assumption	
<b>Retesting of Single Collection Specimens with Confirmed Positive Drug and/or Validity Test Results</b>					<b>Subpart G</b>	<b>26.165(b)</b>
		Percentage of urine specimens with confirmed positive, adulterated, substituted, dilute, or PER retest invalid validity and/or drug test results retested at the request of the donor at a second HHS-certified laboratory		5%	Assumption	
		Percentage increase in retesting of confirmed positive urine specimens based on the new PERI retest rule provision to afford retesting of single specimens		10%	Assumption	



Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Blind Sample Testing - 1st Quarter of Contract with a HHS-Certified Laboratory</b>					<b>Subpart G</b>	<b>26.168(a)(1)</b>
<i>Annual savings per FFD program which conduct all drug tests at an HHS-certified lab</i>						
		Percentage of urine specimens that must be blind test specimens submitted in initial 90 days of a contract with an HHS-certified lab, former rule	PER blind specimens, initial 90 days, former rule	50%	Former rule requirement, 2.8(e)(2) of Appendix A	
		Maximum number of blind specimens to be submitted in the first 90 days of a contract with an HHS-certified lab, former rule	NUM blinds, max, initial 90 days, former rule	500	Former rule requirement, 2.8(e)(2) of Appendix A	
		Percentage of urine specimens that must be blind test specimens submitted in the first 90 days of a contract with an HHS-certified lab - new rule	PER blind specimens, initial 90 days, new rule	20%	Final rule requirement	
		Maximum number of blind specimens to be submitted in the first 90 days of a contract with an HHS-certified lab, new rule	NUM blinds, max, initial 90 days, new rule	100	Final rule requirement	
		Minimum number of blind specimens to be submitted in the first 90 days of a contract with an HHS-certified lab, new rule	NUM blinds, min, initial 90 days, new rule	30	Final rule requirement	
		Percentage of years that a FFD program enters contracts with a different HHS-certified lab	PER FFD programs change HHS lab	10%	Assumption	
		Number of quarters in a year	NUM quarters	4		
<i>Annual costs per FFD program which conducts initial drug testing at an on-site licensee testing facility</i>						
		Percentage of specimens analyzed by a licensee testing facility that must be QA specimen	PER QA specimens	10.0%	Licensee testing facilities include 10 percent of total specimens analyzed as controls, complying with former rule 2.7(d) of Appendix A	
		Percentage of QA specimens that must be a blind specimen	PER QA specimens, blinds	10.0%	Assumption	
		Percentage of blind specimens that must be positive under former requirements	PER Blind specimens, positive	20.0%	Former rule requirement, 2.8(e)(3) of Appendix A	
		Percentage of negative initial drug test result specimens submitted to a HHS-certified laboratory for initial drug testing	PER neg. urine specimens to HHS	1.0%	Assumption	
<b>Blind Sample Testing - Contracts with HHS-Certified Laboratories Older Than 90 Days</b>					<b>Subpart G</b>	<b>26.168(a)(2)</b>
<i>Annual savings per FFD program which conduct all drug tests at an HHS-certified lab</i>						
		Percentage of urine specimens that must be blind test specimens submitted per quarter for an existing contract with an HHS-certified laboratory - former rule	PER blind specimens, per quarter, former rule	10%	Former rule requirement, 2.8(e)(2) of Appendix A	
		Maximum number of blind specimens to be submitted in the first 90 days of a contract with an HHS-certified lab, former rule	NUM blinds, max, per quarter, former rule	250	Former rule requirement, 2.8(e)(2) of Appendix A	
		Percentage of urine specimens that must be blind performance test specimens submitted per quarter for an existing contract with an HHS-certified laboratory - new rule	PER blind specimens, per quarter, new rule	1%	Final rule requirement	
		Maximum number of blind specimens to be submitted per quarter for an existing contract with an HHS-certified lab, new rule	NUM blinds, max, per quarter, new rule	100	Final rule requirement	
		Minimum number of blind specimens to be submitted per quarter for an existing contract with an HHS-certified lab, new rule	NUM blinds, min, per quarter, new rule	10	Final rule requirement	
		Maximum percentage of urine specimens that must be blind specimens submitted per quarter for an existing contract with an HHS-certified laboratory (if total number of specimens submitted is less than 10 specimens), new rule	PER cap on min. num. blinds per quarter	25%	Final rule requirement. The number of blind specimens per quarter is Final at a minimum of 3 percent (up to a maximum of 25 percent) or 10 blinds specimens, whichever is greater.	
		Increase in the cost per blind performance test specimen due to the change in the mix of the positive to negative ratio of blind specimens in the final rule	PERIcost blind specimen	75%	Assumption, cost increase by 75% because of change in mix of blind performance test samples (former rule required 80% of samples to be negative, final rule requires 60% of samples to be positive, 10% false negative challenge, 10% adulterated, substituted, or dilute)	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
		<i>Annual costs per FFD program which conducts initial drug testing at on-site licensee testing facility</i>				
		Percentage of specimens analyzed by a licensee testing facility that must be QA specimens (controls)	PER QA specimens	10.0%	Licensee testing facilities include 10 percent of total specimens analyzed as controls, complying with former rule 2.7(d) of Appendix A	
		Percentage of QA specimens that must be a blind specimen	PER QA specimens, blinds	10.0%	Assumption	
		Percentage of blind specimens that must be positive under former rule	PER Blind specimens, positive, former rule	20.0%	Former rule requirement, 2.8(e)(3) of Appendix A	
		Percentage of negative initial drug test result specimens submitted to a HHS-certified laboratory for initial drug testing	PER neg. urine specimens to HHS	1.0%	Value under Section 26.167(h)(1), cell E727	

**Exhibit A2 - 10**  
**Reporting Requirements**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section	
<b>FFD Programs: Performance Data Reporting and Review</b>						<b>Subpart N</b>	<b>26.717(e), (f)</b>
		<i>Annual savings per program by reducing reporting requirements</i>					
		FFD program manager hours saved in frequency reduction	HOURS manager	20.0 hr	NRC staff estimate		
		<i>Savings from NRC reviewing fewer licensee reports</i>					
		NRC clerical personnel hours saved in reduction in reporting frequency	HOURS clerical	24.0 hr	NRC staff estimate		
		NRC manager hours saved in reduction in reporting frequency	HOURS manager	20.0 hr	NRC staff estimate		
		Number of licensee to whom each C/V submits performance data to under the former rule	NUM licensees	9	Assumption	<b>26.717(g)</b>	
		Cost of mailing (express mail) per information disclosure request	COSTMailing	\$ 10.00	Assumption		
		<i>C/V manager labor burden reduced by only having to produce consolidated report for submission to NRC</i>					
		Hours of C/V manager time to compile one licensee performance data report	HOURS manager	30.0 hr	Assumption		
		% savings achieved by consolidating performance data into a single report submitted to NRC	PER consolidation	25%	Assumption		
		<i>Reduced Mailing costs</i>					
		<b>No Additional Parameters</b>	<b>No additional parameters</b>				
<b>Reporting and Review of Reportable Events Due to New Validity Testing Requirements</b>						<b>Subpart N</b>	<b>26.719(b)</b>
		<b>This parameter is used in the equations below:</b>					
		Percentage of tested staff covered by 26.203(b)(2)	PER staff	15%	Assumption		
		<i>Annual cost per unit due to new validity testing requirements</i>					
		FFD program manager hours required to investigate, analyze, and report an event	HOURS manager	4.0 hr	Assumption		
		<i>Increase in NRC manager labor to review increased number of reportable events</i>					
		NRC manager hours required to review a reported event	HOURS manager	3.0 hr	NRC staff		
		<i>Increase in NRC clerical labor due to increased number of reportable events</i>					
		NRC clerical hours required to process a reported event	HOURS clerical	1.0 hr	NRC staff		
<b>Filing of Forensic Toxicologist's Evaluation</b>						<b>Subpart N</b>	<b>26.713(g)</b>
		<i>One-time cost per program from clerical support to file and store the forensic toxicologist's evaluation of the FFD program's more stringent cutoff levels.</i>					
		Hours of clerical personnel to file and store the forensic toxicologist's evaluation of the FFD program's more stringent cutoff levels per program	HOURSclerical	0.25 hr			
		Percentage of FFD programs that use more stringent cut-off levels for drug testing	PERmore stringent cutoffs	10%	Assumption		
		Percentage of FFD programs who use more stringent cut-off levels for drug testing, but have not reported to the Commission	PER non-report	25%	Assumption		
<b>Memorandum to HHS-Certified Laboratory for Incorrect CCF Form</b>						<b>Subpart G</b>	<b>26.153(g)</b>
		<i>Annual costs per FFD program</i>					
		Number of memoranda per year a collection site used by a facility will write because it uses an expired Federal custody-and-control form or a non-Federal custody-and-control form was used for a specimen collection	NUM memoranda	2	Assumption		
		Time for collection staff to draft a memorandum	HOURS collector	0.25 hr	Assumption		
<b>Licensee Testing Facility Reporting of Testing Data to FFD program (Monthly to Annually)</b>						<b>Subpart F</b>	<b>26.139(d)</b>
		<i>Annual savings per FFD program with Licensee Testing Facility</i>					
		Time for a laboratory supervisor per licensee testing facility to prepare a monthly statistical summary report of urinalysis testing data	HOURS monthly report	1.50 hr	Assumption		
		Time for a laboratory supervisor per licensee testing facility to prepare an annual statistical summary report of urinalysis testing data	HOURS annual report	4.00 hr	Assumption		
		Number of monthly reports per licensee testing facility per year	NUM monthly reports	12	Number of months in a year.		

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>HHS-Certified Laboratory Reporting of Testing Data to FFD program (Monthly to Annually)</b>					<b>Subpart G</b>	<b>26.169(k)</b>
		Time to generate and send an annual or monthly statistical summary report per facility	HOURS lab tech	0.50 hour	Assumption	
		Number of reports per month per facility	NUM reports per month	1	former requirement	
		Number of reports that will no longer be sent to a facility	NUM reports	11	Final requirement to move from monthly to annual reporting	
		Cost to send an annual or monthly statistical summary report via the U.S. Postal Service	COSTpostage	\$ 2.00	Assumption	
<b>NRC Review of Fatigue Information in Annual FFD Performance Reports</b>					<b>Subpart I</b>	<b>26.203(e)</b>
		<i>Annual cost to NRC to review and summarize annual reports on fatigue</i>				
		NRC clerical hours per year to assist in reviewing and summarizing the additional information addressing fatigue	HOURS Clerical	24.0 hr	Assumption	
		NRC manager hours per year to review and summarize the additional information addressing fatigue	HOURS Manager	24.0 hr	Assumption	

**Exhibit A2 - 11:  
Hourly Wage Rates**

<b>Worker Type</b>	<b>Hourly Wage Rate (2002 \$)</b>	<b>Hourly Wage Rate (Adjusted 2006 \$)</b>	<b>Source/Comments</b>
C/V manager		\$ 50.00 /hour	Assumption
Clerical	\$ 15.75 /hour	\$ 17.52 /hour	Model Facility Data from NEI Jan to May 2002
Collection Site Supervisor		\$ 50.00 /hour	Assumption
Collector or Collection Site Personnel	\$ 22.78 /hour	\$ 25.34 /hour	Model Facility Data from NEI Jan to May 2002
EAP	\$ 28.85 /hour	\$ 32.09 /hour	Model Facility Data from NEI Jan to May 2002
Facility Supervisor		\$ 70.00 /hour	Assumption
FFD Program Manager	\$ 31.98 /hour	\$ 35.57 /hour	Model Facility Data from NEI Jan to May 2002
FFD Staff		\$ 30.00 /hour	Assumption
Forensic Toxicologist		\$ 93.75 /hour	Derived from quote from a drug testing expert
HR personnel		\$ 50.00 /hour	Assumption
Contractor/Vendor Worker	\$ 58.00 /hour	\$ 64.52 /hour	Model Facility Data from NEI Jan to May 2002
Lab supervisor		\$ 50.00 /hour	Assumption
Lab Technician	\$ 26.54 /hour	\$ 29.52 /hour	Model Facility Data from NEI Jan to May 2002
Legal		\$ 100.00 /hour	Assumption
MRO	\$ 100.00 /hour	\$ 111.24 /hour	Model Facility Data from NEI Jan to May 2002
NRC Clerical		\$ 40.00 /hour	NRC staff , 2004
NRC Staff		\$ 87.00 /hour	NRC staff , 2004
SAE	\$ 28.85 /hour	\$ 32.09 /hour	Same as SAP wage rate
Trainer		\$ 50.00 /hour	Assumption
Training Manager		\$ 55.00 /hour	Assumption
Facility Worker (weighted average facility workers & C/Vs)	\$ 55.14 /hour	\$ 61.34 /hour	Model Facility Data from NEI Jan to May 2002
Facility Worker (not weighted)	\$ 36.21 /hour	\$ 40.28 /hour	Model Facility Data from NEI Jan to May 2002

2002 dollars have been adjusted to 2006 using implicit price deflators for GDP in the Survey of Current Business, as reported by the U.S. Department of Commerce, Bureau of Economic Analysis. Obtained at <http://bea.gov/bea/pubs.htm>.

**Exhibit A2 - 12:  
Testing and Applicant Information**

<b>Parameter Description</b>	<b>Value</b>	<b>Source</b>
<b>Drug &amp; Alcohol Testing Information</b>		
Total Number of Drug Tests per year for all FFD Programs	135,702	2005 Information Notice, NRC Table 1. Test results for each test category
Total Number of Drug Tests per Reactor per year	1,280 tests/reactor	Calculated
Total Number of Alcohol Tests per year for all FFD Programs	135,702	2005 Information Notice, NRC Table 1. Test results for each test category (one alcohol test and one drug test conducted for each testing event)
Total Number of Alcohol Tests per year per Reactor	1,280 tests/reactor	Calculated
Total Number of Random Drug and Alcohol Tests per year for all programs	50,286	2005 Information Notice, NRC Table 1. Test results for each test category
Total Number of Random Drug and Alcohol Tests per year per reactor	474 tests/reactor	Calculated
Negative Random Drug and Alcohol Test Rate in 2005	99.71%	Calculated
Positive Random Drug and Alcohol Test Rate in 2005	0.29%	Calculated
Number of confirmed positive alcohol tests per year for all FFD programs	196	2005 Information Notice, NRC Table 5. Number of confirmed positives by substance
Number of confirmed positive alcohol tests per reactor per year	1.85 tests/reactor	Calculated
Number of positive drug test results per year for all FFD programs	755	2005 Information Notice, NRC Table 5. Number of confirmed positives by substance
Number of positive drug test results per reactor	7.12 tests/reactor	Calculated
Positive drug test result rate in 2000	0.56%	Calculated
Number of marijuana positive drug test results per year for all FFD programs	432	2005 Information Notice, NRC Table 5. Number of confirmed positives by substance
Number of marijuana positive drug test results per reactor	4.08 tests/reactor	Calculated
Positive marijuana drug test result rate in 2000	0.32%	Calculated
Number of opiate positive drug test results per year for all FFD programs	16	2005 Information Notice, NRC Table 5. Number of confirmed positives by substance
Number of opiate positive drug test results per reactor	0.15 tests/reactor	Calculated
Positive opiate drug test result rate in 2000	0.01%	Calculated

**Exhibit A2 - 12:  
Testing and Applicant Information**

<b>Parameter Description</b>	<b>Value</b>	<b>Source</b>
<b>Drug &amp; Alcohol Testing Information (continued)</b>		
Annual number of drug and alcohol tests yielding positive results for all programs	979	2005 Information Notice, NRC Table 3. 2005 Test results by test category
Annual number of drug and alcohol tests yielding positive results per reactor	9.24 tests/reactor	Calculated
Annual number of positive pre-access drug and alcohol test results for all programs	648	2005 Information Notice, NRC Table 3. 2005 Test results by test category
Annual number of positive pre-access drug and alcohol test results per reactor	6.11 tests/reactor	Calculated
Annual number of positive random drug and alcohol test results for all programs	147	2005 Information Notice, NRC Table 3. 2005 Test results by test category
Annual number of positive random drug and alcohol test results per reactor	1.39 tests/reactor	Calculated
Annual number of positive post-event drug and alcohol test results for all programs	1	2005 Information Notice, NRC Table 3. 2005 Test results by test category
Annual number of positive post-event drug and alcohol test results per reactor	0.01 tests/reactor	Calculated
Annual number of follow-up drug and alcohol test results for all programs	31	2005 Information Notice, NRC Table 3. 2005 Test results by test category
Annual number of follow-up drug and alcohol test results per reactor	0.29 tests/reactor	Calculated
Annual number of positive other drug and alcohol test results for all programs	47	2005 Information Notice, NRC Table 3. 2005 Test results by test category
Annual number of positive other drug and alcohol test results per reactor	0.44 tests/reactor	Calculated
Annual number of for-cause referrals for all programs	1,161	2005 Information Notice, NRC Table 2 - Test Results for Each Test Category and Work Category
Annual number of for-cause referrals per reactor	10.95 tests/reactor	Calculated
Annual number of for-cause tests yielding positive test results	106	2005 Information Notice, NRC Table 2 - Test Results for Each Test Category and Work Category
Positive for-cause testing rate in 2005	<b>9.13%</b>	Calculated

**Exhibit A2 - 12:  
Testing and Applicant Information**

<b>Parameter Description</b>	<b>Value</b>	<b>Source</b>
<b>Validity Test Data</b>		
Percentage of adulterated, substituted, dilute, and invalid validity test results (total)	2.691%	Consists of the sum of dilute (2-5, 5-20 mg/dL), substituted, adulterated, and invalid
Percentage of specimens - Dilute (>5 and <20 mg/dL creatinine)	2.60%	Quest Diagnostics, n=435,309, likely a quarter's data for all Quest Labs (presented 2/2003)
Percentage of specimens - Dilute (2 - 5 mg/dL creatinine)	0.015%	DHHS National Laboratory Certification Program, data from 7/01-6/02 based on n=5,266,000
Percentage of specimens - Substituted (<2 mg/dL creatinine)	0.016%	DHHS National Laboratory Certification Program, data from 7/01-6/02 based on n=5,266,000
Percentage of specimens - Adulterated	0.025%	DHHS National Laboratory Certification Program, data from 7/01-6/02 based on n=5,266,001
Percentage of specimens - Invalid	0.035%	DHHS National Laboratory Certification Program, data from 7/01-6/02 based on n=5,266,002
<b>Applicant information</b>		
Annual number of applicants for authorization for all programs	65,845	NEI Estimate
Annual number of applicants for authorization per reactor	621	Calculated
Annual number of reportable events for all programs	135,702	2005 FFD Performance Reports
Annual number of reportable events per reactor	1,280	Calculated
Annual number of applicants for initial and updated authorization for all programs	20,509	NEI Estimate
Annual number of applicants for initial and updated authorization per reactor	193.48	Calculated
Annual number of applicants for initial authorization for all programs	17,869	NEI Estimate
Annual number of applicants for initial authorization per reactor	168.58	Calculated



**Exhibit A2 - 12:  
Testing and Applicant Information**

Parameter Description	Value	Source
<b>Applicant information (continued)</b>		
Annual number of applicants for updated authorization for all programs	2,640	NEI Estimate
Annual number of applicants for updated authorization per reactor	24.91	Calculated
Annual number of applicants for authorization reinstatement with an interruption of 30 days or less for all programs	26,068	NEI Estimate
Annual number of applicants for authorization reinstatement with an interruption of 30 days or less per reactor	245.92	Calculated
Annual number of applicants for authorization reinstatement with an interruption of 5 days or less	40.99	Calculated
Annual number of applicants for authorization reinstatement with an interruption of 6-30 days	204.94	Calculated
Annual number of applicants for authorization reinstatement with an interruption of between 31 and 365 days for all programs	19,268	NEI Estimate
Annual number of applicants for authorization reinstatement with an interruption of between 31 and 365 days per reactor	181.77	Calculated
Number of applicants per training session	20	Assumption

**Exhibit A2 - 13:**  
**Drug and Alcohol Testing Data (in 2006 \$)**

**Drug and Alcohol Specimen Collection - LABOR COSTS** (Source: Model Facility Data from NEI Jan to May 2002)

<b>Time per activity for a drug and alcohol collection</b>	<b>Time</b>	<b>Activity</b>	<b>Activity definitions</b>
Worker travel time (to test and back to work)	0.60 hr	w	w= worker
ID Worker	0.03 hr	w, c	c= collector
Complete Initial Paperwork	0.09 hr	w, c	
Perform Alcohol Test	0.09 hr	w, c	
Perform Drug Screen	0.18 hr	w, c	
<b>Labor costs for a drug and alcohol collection</b>	<b>Time for collection (drug &amp; alcohol)</b>	<b>Wage rate</b>	<b>Cost per test</b>
Labor collector - per testing process (one urine collection - initial breath collection)	0.39 hr	\$ 25.34	\$ 9.84
Labor worker - per testing process (one urine collection - initial breath collection)	0.99 hr	\$ 55.14	\$ 54.70
<b>Labor costs of drug and alcohol specimen collection (collector &amp; worker)</b>			<b>\$ 64.54</b>
<b>Time per activity for a drug specimen collection</b>	<b>Time</b>	<b>Activity</b>	<b>Activity definitions</b>
Worker travel time (to test and back to work)	0.60 hr	w	w= worker
ID Worker	0.03 hr	w, c	c= collector
Complete Initial Paperwork	0.09 hr	w, c	
Perform Drug Screen	0.18 hr	w, c	
<b>Labor costs for a drug specimen collection</b>	<b>Time for collection (drug &amp; alcohol)</b>	<b>Wage rate</b>	<b>Cost per test</b>
Labor collector - per testing process (one urine collection)	0.30 hr	\$ 25.34	\$ 7.59
Labor worker - per testing process (one urine collection)	0.90 hr	\$ 55.14	\$ 49.81
<b>Labor costs of drug specimen collection (collector &amp; worker)</b>			<b>\$ 57.40</b>
<b>NEGATIVE TEST RESULTS - SUMMARY OF COSTS (labor, equipment and specimen testing costs)</b>			
<b>Negative Result - Alcohol test and Drug test (onsite testing) former rule</b>			<b>Description</b>
Labor costs of drug and alcohol collection (collector & worker)	\$	64.54	Costs include: (1) travel time of worker; (2) collection of drug and alcohol specimens (the labor of collector and worker, collection materials), (3) onsite licensee testing costs per urine specimen for drugs; (4) labor of FFD manager to process negative test results paperwork
Equipment cost for alcohol testing (initial test - 2 breath collections)	\$	0.20	
Initial drug test - onsite licensee testing facility	\$	26.98	
FFD manager labor per negative test result	\$	3.56	
<b>Total per test</b>	<b>\$</b>	<b>95.28 /test</b>	
<b>Negative Result - Alcohol test and Drug test (all testing at HHS certified lab), former rule</b>			<b>Description</b>
Labor costs of drug and alcohol collection (collector & worker)	\$	64.54	Costs include: (1) travel time of worker; (2) collection of drug and alcohol specimens (the labor of collector and worker, collection materials), (3) HHS-certified lab costs per urine specimen for drugs; (4) labor of FFD manager to process negative test results paperwork
Equipment cost for alcohol testing (initial test - 2 breath collections)	\$	0.20	
Drug testing (initial & confirmatory when necessary) - HHS certified laboratory (all licensee testing conducted at HHS lab)	\$	22.88	
FFD manager labor per negative test result	\$	3.56	
<b>Total per test</b>	<b>\$</b>	<b>91.18 /test</b>	

<b>Negative Result - Alcohol test and Drug &amp; Validity test (onsite testing facility), final rule</b>		<b>Description</b>
Labor costs of drug and alcohol collection (collector & worker)	\$ 64.54	Costs include: (1) travel time of worker; (2) collection of drug and alcohol specimens (the labor of collector and worker, collection materials), (3) onsite licensee testing costs per urine specimen for drugs & validity; (4) labor of FFD manager to process negative test results paperwork
Equipment cost for alcohol testing (initial test - 1 breath collection)	\$ 0.10	
Validity Testing (onsite) - Total Labor and Reagents cost per specimen	\$ 4.22	
Initial drug test - onsite licensee testing facility	\$ 26.98	
FFD manager labor per negative test result	\$ 3.56	
<b>Total per test</b>	<b>\$ 99.40 /test</b>	
<b>Negative Result - Alcohol test and Drug &amp; Validity test (all testing at HHS lab) - final rule</b>		<b>Description</b>
Labor costs of drug and alcohol collection (collector & worker)	\$ 64.54	Costs include: (1) travel time of worker; (2) collection of drug and alcohol specimens (the labor of collector and worker, collection materials), (3) HHS-certified lab costs per urine specimen for drugs & validity; (4) labor of FFD manager to process negative test results paperwork
Equipment cost for alcohol testing (initial test - 1 breath collection)	\$ 0.10	
Validity testing incremental (at HHS-certified lab - initial and confirmatory testing)	\$ 1.50	
Drug testing (initial & confirmatory when necessary) - HHS certified laboratory (all licensee testing conducted at HHS lab)	\$ 22.88	
FFD manager labor per negative test result	\$ 3.56	
<b>Total per test</b>	<b>\$ 92.58 /test</b>	
<b>MRO Testing - Negative Result - Alcohol test and Drug &amp; Validity test (at onsite testing facility) - final rule</b>		<b>Description</b>
Labor costs of drug and alcohol collection (collector )	\$ 9.84	Same cost as: Negative Result - Alcohol test and Drug & Validity test (onsite testing facility), final rule, no MRO labor for travel or the collection process, the labor is accounted for separately
Equipment cost for alcohol testing (initial test - 1 breath collection)	\$ 0.10	
Validity Testing (onsite) - Total Labor and Reagents cost per specimen	\$ 4.22	
Initial drug test - onsite licensee testing facility	\$ 24.25	
FFD manager labor per negative test result	\$ 3.56	
<b>Total per test</b>	<b>\$ 41.97 /test</b>	
<b>MRO Testing - Negative Result - Alcohol test and Drug &amp; Validity test (all testing at HHS lab) - final rule</b>		<b>Description</b>
Labor costs of drug and alcohol collection (collector only)	\$ 9.84	Same cost as: Negative Result - Alcohol test and Drug & Validity test (all testing at HHS lab) - final rule, no MRO labor for travel or the collection process, the labor is accounted for separately
Equipment cost for alcohol testing (initial test - 1 breath collection)	\$ 0.10	
Validity testing incremental (at HHS-certified lab - initial and confirmatory testing)	\$ 1.50	
Drug testing (initial & confirmatory when necessary) - HHS certified laboratory (all licensee testing conducted at HHS lab)	\$ 22.88	
FFD manager labor per negative test result	\$ 3.56	
<b>Total per test</b>	<b>\$ 37.88 /test</b>	
<b>MRO Testing - Incremental Cost for Alcohol and Drug Specimen Collection at a Non-Licensee Collection Facility</b>		<b>Description</b>
Additional drug and alcohol specimen collection and shipping costs from non-licensee collection facilities	\$ 30.00	Twice the labor cost of drug and alcohol collection (collector only) plus shipping cost

<b>Positive (DRUG/VALIDITY/ALCOHOL) TEST RESULT - LABOR COSTS</b>			
<b>Subsequent actions - positive drug/validity/alcohol test result</b>	<b>Time</b>	<b>Wage rate</b>	<b>Source</b>
Labor MRO	0.42 hr	\$ 111.24	Model Facility Data from NEI Jan to May 2002
FFD manager	2.58 hr	\$ 35.57	
Worker	0.47 hr	\$ 55.14	
<b>Total cost subsequent actions per confirmed positive drug/validity/alcohol test result</b>		<b>164.14</b>	
<b>Appeal of positive drug/validity/alcohol (no change former rule or final rule)</b>	<b>Wage rate</b>	<b>Units</b>	<b>Source</b>
FFD manager (average labor per result)	\$ 35.57	12.50 hr	Discussion with NEI staff, May 23, 2003
Worker	\$ 55.14	2.00 hr	
<b>Total cost per appeal (positive drug/validity/alcohol test result)</b>		<b>\$555 /appeal</b>	
<b>Positive (DRUG/VALIDITY/ALCOHOL) TEST RESULT - SUMMARY OF COSTS (labor, equipment and specimen testing costs)</b>			
<b>Positive Result - Alcohol/Drug/Validity test - (onsite testing facility), final rule</b>		<b>Description</b>	
Labor costs of drug and alcohol collection (collector & worker)	\$ 64.54	Costs include: (1) travel time of worker; (2) collection of drug and alcohol specimens (the labor of collector and worker, collection materials), (3) onsite licensee testing costs per urine specimen for drugs; (4) HHS-certified lab cost per specimen for drugs and validity; (5) cost of subsequent actions resulting from a confirmatory positive drug/validity test result.	
Equipment cost for alcohol testing (initial test - 1 breath collection)	\$ 0.10		
Validity Testing (onsite) - Total Labor and Reagents cost per specimen	\$ 4.22		
Initial drug test - onsite licensee testing facility	\$ 26.98		
Drug testing (initial & confirmatory when necessary) at HHS-certified lab (after initial positive drug/questionable validity test result at licensee testing facility)	\$ 35.25		
Validity testing incremental (at HHS-certified lab - initial and confirmatory testing)	\$ 1.50		
Subsequent actions - positive drug/validity/alcohol test result	\$ 164.14		
<b>Total per test</b>		<b>\$ 296.73 /test</b>	
<b>Positive Result - Alcohol/Drug/Validity test - (all testing at HHS certified lab) - final rule</b>		<b>Description</b>	
Labor costs of drug and alcohol collection (collector & worker)	\$ 64.54	Costs include: (1) travel time of worker; (2) collection of drug and alcohol specimens (the labor of collector and worker, collection materials), (3) HHS-certified lab costs per urine specimen for drugs and validity; (4) cost of subsequent actions resulting from a confirmatory positive drug/validity test result.	
Equipment cost for alcohol testing (initial test - 1 breath collection)	\$ 0.10		
Validity Testing (onsite) - Total Labor and Reagents cost per specimen	\$ 4.22		
Initial and confirmatory (when necessary) drug test	\$ 22.88		
Subsequent actions - positive drug/validity/alcohol test result	\$ 164.14		
<b>Total per test</b>			

<b>VALIDITY TESTING (labor &amp; equipment) - Onsite Licensee Testing Facility - Final Rule</b>				
<b>Validity testing - Lab Technican Labor costs per urine specimen</b>		<b>time/test</b>	<b>wage rate</b>	
<u>Time per urine specimen for validity testing</u>				
pH test		0.02 hr	\$ 29.52	
creatinine		0.02 hr	\$ 29.52	
one adulterant assay		0.03 hr	\$ 29.52	
<b>Validity testing (onsite) - Total Assay Labor cost per specimen</b>			<b>\$ 1.97 /specimen</b>	
<b>Validity testing - Reagents Cost - per urine specimen</b>		<b>Cost per test</b>		
<u>Reagent costs of validity testing per urine specimen</u>				
pH test			\$ 0.25	
creatinine			\$ 1.00	
one adulterant assay			\$ 1.00	
<b>Validity Testing (onsite) - Total Reagents cost per specimen</b>			<b>\$ 2.25 /specimen</b>	
<b>Validity Testing (onsite) - Total Labor and Reagents cost per specimen</b>			<b>\$ 4.22 /specimen</b>	
<b>Validity testing - Lab Technican Labor Costs - Daily Calibration of Equipment</b>		<b>time/calibration</b>	<b>wage rate</b>	
<u>Daily calibration of validity testing equipment</u>				
pH test		0.08 hr	\$ 29.52	
creatinine		0.17 hr	\$ 29.52	
one adulterant assay		0.17 hr	\$ 29.52	
<b>Validity Testing (onsite) - Total Labor cost per day to calibrate equipment</b>			<b>\$ 12.30 /day</b>	
<b>Validity testing - Reagents Cost - Daily Calibration of Equipment</b>		<b>Cost per test</b>		
<u>Reagent costs of validity testing per urine specimen</u>				
pH test			\$ 0.50 / day	
creatinine			\$ 1.00 / day	
one adulterant assay			\$ 1.00 / day	
<b>Validity Testing (onsite) - Total Reagent Costs per Daily Calibration</b>			<b>\$ 2.50 / day</b>	
<b>Validity Testing - pH meter &amp; accessories per Licensee Testing Facility</b>		<b>Cost</b>	<b>Equipment life</b>	<b>Annualized cost</b>
ph meter		\$ 600.00	6.0 years	\$ 100.00
ph meter probe		\$ 150.00	2.0 years	\$ 75.00
<b>VALIDITY TESTING - HHS-certified laboratory - Final Rule</b>				
<b>Source</b>				
Validity testing incremental (at HHS-certified lab - initial and confirmatory testing)		\$ 1.50 /test	Assumption, range of testing costs from \$0.00 to \$3.00.	

<b>DRUG TESTING - LICENSEE TESTING FACILITY</b>			
			<b>Source</b>
Drug test (initial) - at onsite licensee testing facility	\$	26.98 /test	Model Facility Data from NEI Jan to May 2002
<b>DRUG TESTING - HHS- CERTIFIED LABORATORY</b>			
<b>Test Type</b>		<b>Cost/test</b>	<b>Source</b>
Drug testing (initial & confirmatory when necessary) at HHS-certified lab (after initial positive drug/questionable validity test result at licensee testing facility)	\$	35.25 /test	Model Facility Data from NEI Jan to May 2002
Drug testing (initial & confirmatory when necessary) - HHS certified laboratory (all licensee testing conducted at HHS lab)	\$	22.88 /test	Model Facility Data from NEI Jan to May 2002
Dilute Specimen (>=2-20 mg/dL Creatinine) Testing - GC/MS Level of Detection Testing (LOD)	\$	75.00 /test	Assumption
Cost of retesting - a confirmed positive drug/adulterated or substituted validity test specimen at second HHS-certified lab (includes specimen preparation and shipping costs)	\$	62.50 /test	Assumption, range of testing costs from \$50.00 to \$75.00
Retesting a specimen at a second HHS lab when the initial HHS lab could not identify a suspected interfering substance/adulterant (includes specimen preparation, packaging, and shipping)	\$	125.00 /test	Costs for to analyze for adulterants at a second HHS-certified lab (cost ranges from \$50.00 to \$200.00 depending on the contract with the lab)
<b>ALCOHOL TESTING EQUIPMENT</b>			
<b>Evidential Breath Testing Device (EBT) - purchase</b>			<b>Source</b>
EBT - compliant with § 26.91(c) in the final rule - included printer and carrying case	\$	2,250	Equipment manufacturer of NHTSA certified EBT (fuel cell)
<b>EBT Calibration Equipment</b>			<b>Source</b>
Regulator (to attach calibration canister to EBT)	\$	100.00	Equipment manufacturer of NHTSA certified EBT (fuel cell)
Calibration canister	\$	75.00	Equipment manufacturer of NHTSA certified EBT (fuel cell)
<b>EBT Exhalent tubes (source: discussion with NEI staff, May 2003)</b>	<b>Unit cost</b>	<b># of tubes</b>	<b>Cost per test</b>
Exhalent tubes (per test = 2 breath specimens) - former rule	\$	0.10 /tube	2 \$ 0.20
Exhalent tubes (per test = 1 breath specimen) - final rule	\$	0.10 /tube	1 \$ 0.10
<b>Blood Alcohol testing - Existing Rule</b>			
Blood alcohol testing - cost per blood specimen to conduct laboratory analysis	\$	31.98	Model Facility Data from NEI Jan to May 2002
Cost per blood test for a phlebotomist/RN to arrive at the onsite collection site and conduct the blood draw	\$	100.00	Assumption

<b>BLIND PERFORMANCE SAMPLE &amp; TESTING COSTS</b>		<b>Subpart G</b>	<b>26.168(a)(1)</b> <b>26.168(a)(2)</b>
<b>Cost per blind performance sample &amp; testing - former rule (all testing at HHS-lab)</b>		<b>Source</b>	
Cost per blind specimen, former rule: purchased from a vendor, prepared, and shipped to the HHS-certified laboratory for testing, and FFD manager follow-up to check results (former rule)	\$ 29.34 /test	Model Facility Data from NEI Jan to May 2002	
Drug testing (initial & confirmatory when necessary) - HHS certified laboratory (all licensee testing conducted at HHS lab) (former rule)	\$ 22.88 /test	Model Facility Data from NEI Jan to May 2002	
<b>Total per test</b>	<b>\$ 52.22</b>		
<b>Cost per blind performance sample &amp; testing - final rule (all testing at HHS-lab)</b>		<b>Source</b>	
Cost per blind specimen, former rule: purchased from a vendor, prepared, and shipped to the HHS-certified laboratory for testing, and FFD manager follow-up to check results (former rule)	\$ 29.34 /test	Model Facility Data from NEI Jan to May 2002	
Increase in the cost per blind performance test specimen due to the change in the mix of the positive to negative ratio of blind specimens in the final rule	\$ 22.00 /test	Assumption, 75 percent increase in cost of blind performance test sample	
Drug testing (initial & confirmatory when necessary) - HHS certified laboratory (all licensee testing conducted at HHS lab)	\$ 22.88 /test	Model Facility Data from NEI Jan to May 2002	
Validity testing incremental (at HHS-certified lab - initial and confirmatory testing)	\$ 1.50 /test	Assumption	
<b>Total per test</b>	<b>\$ 75.72</b>		
<b>Cost per blind performance sample &amp; testing - former rule (for FFD programs with onsite licensee testing facilities)</b>		<b>Source</b>	
Cost per blind specimen, former rule: purchased from a vendor, prepared, and shipped to the HHS-certified laboratory for testing, and FFD manager follow-up to check results (former rule)	\$ 29.34 /test	Model Facility Data from NEI Jan to May 2002	
Drug testing (initial & confirmatory when necessary) at HHS-certified lab (after initial positive drug/questionable validity test result at licensee testing facility) (former rule)	\$ 35.25 /test	Model Facility Data from NEI Jan to May 2002	
<b>Total per test</b>	<b>\$ 64.59</b>		
<b>Cost per blind performance sample &amp; testing - final rule (or FFD programs with onsite licensee testing facilities)</b>		<b>Source</b>	
Cost per blind specimen, former rule: purchased from a vendor, prepared, and shipped to the HHS-certified laboratory for testing, and FFD manager follow-up to check results (former rule)	\$ 29.34 /test	Model Facility Data from NEI Jan to May 2002	
Increase in the cost per blind performance test specimen due to the change in the mix of the positive to negative ratio of blind specimens in the final rule	\$ 22.00 /test	Assumption, 75 percent increase in cost of blind performance test sample	
Drug testing (initial & confirmatory when necessary) at HHS-certified lab (after initial positive drug/questionable validity test result at licensee testing facility)	\$ 35.25 /test	Model Facility Data from NEI Jan to May 2002	
Validity testing incremental (at HHS-certified lab - initial and confirmatory testing)	\$ 1.50 /test	Assumption	
<b>Total per test</b>	<b>\$ 88.09</b>		
<b>PAPER WORK REQUIREMENTS - Drug and Alcohol Testing</b>			
<b>Information Collection Burden Activities - Negative and Positive Test Results</b>		<b>Source</b>	
File paper work per negative drug and/or alcohol test result	0.05 hr	Assumption	
File paperwork per positive drug and/or alcohol test result	0.25 hr	Assumption	
File paperwork per appealed positive drug and/or alcohol test result	0.50 hr	Assumption	

**Exhibit A2 - 14:****FFD Programs**

<b>FFD Program/Licensee</b>	<b>Number of Facilities per Program</b>	<b>Number of Units per Program</b>	<b>On-Site or Off-Site Testing</b>	<b>Number of Employees per Unit</b>	<b>Total Number of Employees per Program</b>
Ameren UE	1	1	On-site	949	949
AmerGen Energy Company	3	3	On-site	949	2,846
Arizona Public Service Company	1	3	On-site	949	2,846
Carolina Power & Light	3	4	Off-site	949	3,795
Constellation Energy	3	5	Off-site	949	4,744
Detroit Edison Company	1	1	Off-site	949	949
Dominion Generation	4	7	Off-site	949	6,642
Duke Energy Power Company, LLC	3	7	Off-site	949	6,642
Energy Northwest	1	1	On-site	949	949
Entergy Nuclear Operations, Inc.	8	10	Off-site	949	9,488
Exelon Generation Co., LLC	7	14	On-site	949	13,283
FirstEnergy Nuclear Operating Co.	3	4	Off-site	949	3,795
Florida Power Corp.	1	1	Off-site	949	949
FPL Group	4	6	Off-site	949	5,693
Indiana/Michigan Power Co.	1	2	On-site	949	1,898
Nebraska Public Power District	1	1	Off-site	949	949
Nuclear Management Co.	4	6	Off-site	949	5,693
Omaha Public Power District	1	1	Off-site	949	949
Pacific Gas & Electric Co.	1	2	Off-site	949	1,898
PPL Susquehanna, LLC	1	2	On-site	949	1,898
PSEG Nuclear, LLC	2	3	On-site	949	2,846
South Carolina Electric & Gas Co.	1	1	Off-site	949	949
Southern California Edison Co.	1	2	On-site	949	1,898
Southern Nuclear Operating Co.	3	6	On-site	949	5,693
STP Nuclear Operating Co.	1	2	Off-site	949	1,898
Tennessee Valley Authority	3	5	Off-site	949	4,744
TXU Generation Company, LP	1	2	Off-site	949	1,898
Wolf Creek Nuclear Operating Corp.	1	1	Off-site	949	949
Westinghouse	2	2	Off-site	750	1,500
Inpo	1	1	Off-site	250	250
BWX Technologies	1	1	Off-site	811	811
Nuclear Fuel Services	1	1	Off-site	300	300
MOX Facility	1	1	Off-site	400	400



**Exhibit A2-15**

**Fatigue Inputs**

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Policy and Procedures</b>						<b>26.203(a)-(b)</b>
<i>One-time costs per program to account for FFD manager and clerical personnel time and to contract a legal consultant to implement fatigue provisions into the written policies and procedures</i>						
		Hours of FFD program staff to develop and revise policies and procedures for fatigue provisions per program	HOURS ffd_staff	80.0 hr	Assumption	
		Hours of labor of various managers to review and approve policies and procedures for fatigue provisions per program	HOURS manager-fatigue	40.0 hr	Assumption	
		Hours of legal assistance to review and revise policies and procedures for fatigue provisions	HOURS legal-fatigue	20.0 hr	Assumption	
		Hours of clerical personnel to support revision of policies and procedures for fatigue provisions	HOURS clerical-fatigue	40.0 hr	Assumption	
<i>One-time costs per program to provide additional facility supervisor time to implement the corporate policies on the management of fatigue at the facility level</i>						
		Hours of facility supervisor time to implement revised corporate policies and procedures for fatigue	HOURS facility supervisor-fatigue	160.0 hr	Assumption	
<b>Training</b>						<b>26.203(c)</b>
<b>The following variables are used in several of the equations in this section</b>						
		Length of training addressing the fatigue-related KAs per session	HOURS Training-Fatigue	1.0 hr	Assumption	
		Length of comprehensive examination increment addressing the fatigue-related KAs	HOURS Examination-Fatigue	0.2 hr	Assumption	
		Hours of incremental preparation and examination grading per session addressing the fatigue-related KAs	HOURS Preparation-Fatigue	0.5 hr	Assumption	
<i>One-time cost per program associated with revising the training program to include fatigue KAs</i>						
		Hours of industry consultant time per program to develop generic training materials for use by the entire industry	HOURS Consultant	2.6 hr	Assumption	
		Hourly wage for industry consultant to develop generic training materials for use by the entire industry	WAGE Training_Consultant_Loaded	\$ 90.00 /hour		
		Hours of training time per program to revise the training materials to address fatigue KAs	HOURS Trainer	8.0 hr	Assumption	
		Hours of training manager time per program to revise the training materials to address fatigue KAs	HOURS Training Manager	2.0 hr	Assumption	
		Hours of FFD proram manager time per program to revise the training program to address fatigue KAs	HOURS Manager	2.0 hr	Assumption	
		Hours of clerical personnel time to support the revision of the training program to address fatigue KAs	HOURS Clerical	4.0 hr	Assumption	
<i>One-time costs per program to retrain existing employees on the fatigue related KAs</i>						
No additional parameters						
<i>One-time costs per program for trainers to administer the training on the fatigue-related KAs</i>						
		Number of workers per training session per facility	NUM Sessions	50	Assumption	
<i>Annual cost per program for incoming employees to take the training course increment for fatigue-related KAs</i>						
		Turnover Rate (e.g., new hires including outage workers) covered by fatigue provision per PER Applicants facility per year		25%	Assumption	
<i>Annual cost per program for trainers to administer training course for fatigue-related KAs</i>						
		Number of workers per training session per facility	NUM Sessions	20	Assumption	
<i>Annual costs per program for employees to take the refresher training increment addressing fatigue-related KAs</i>						
		Percentage of employees taking refresher training	PER Refresher	20%	Assumption	
		Length of fatigue-related portion of refresher training course	HOURS Fatigue Training	1.00 hr	Assumption	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<i>Annual costs per program for trainers to administer the refresher training increment addressing fatigue-related KAs</i>						
		Number of workers per training session per facility	NUM Sessions	20	Assumption	
		Length of fatigue-related refresher training course	HOURS Fatigue Training	1.00 hr	see Appendix 2, Exhibit A2-3	
<b>Retaining Fatigue Records</b>					<b>Subpart I</b>	<b>26.203(d)</b>
<i>Annual cost per program to physically place the documentation required under 26.197(d)(1), (2), (4), and (5) into the appropriate filing cabinets or storage facilities</i>						
		Annual number of hours per facility to store individuals' work hours under final rule	HOURS Work Hours	40.0 hr	Assumption	
		Annual number of hours per facility to store work hour reviews under final rule	HOURS Reviews	4.0 hr	Assumption	
		Annual number of hours per facility to store fatigue assessment documentation under final rule	HOURS Assessments	10.0 hr	Assumption	
<i>Annual savings per program as a result of fewer waivers being issued</i>						
		Annual number of hours per facility to file deviation authorizations under existing technical specifications	HOURS WaiverTS	12.0 hr	Assumption	
		Annual number of hours per facility to file waivers under final rule	HOURS WaiverNew	1.0 hr	Assumption	
<b>Summarize Waiver Data</b>					<b>Subpart I</b>	<b>26.203(e)(1)</b>
<i>Annual cost per program to review documentation for the waived individual work hour controls in 26.205(d)(1)-(5)(i) from the previous calendar year, categorize the instances of waivers as required, and report the data and frequency distribution in the FFD program performance report</i>						
		Annual hours of clerical worker labor to tally the annual number of waivers of each type, separate operating waivers from outage waivers, produce a frequency distribution, and report these data in the FFD program report	HOURS Clerical	25.0 hr	Assumption	
		Annual hours of managerial labor to review the waivers data included in the FFD program report	HOURS Manager	25.0 hr	Assumption	
<b>Summarize Corrective Actions</b>					<b>Subpart I</b>	<b>26.203(e)(2)</b>
<i>Annual cost per program to report corrective actions, if any, resulting from the analyses of waiver documentation.</i>						
		Annual number of clerical labor hours to produce a summary of corrective actions and report this information in the FFD program report	HOURS Clerical	1.0 hr	Assumption	
		Annual number of FFD staff labor hours to produce a summary of corrective actions and report this information in the FFD program report	HOURS FFD staff	4.0 hr	Assumption	
		Annual number of manager labor hours to review and summarize corrective actions included in the FFD program report	HOURS Manager	1.0 hr	Assumption	
<b>Fatigue Management Audits</b>					<b>Subpart I</b>	<b>26.203(f)</b>
<i>Annual cost per program to audit fatigue management as part of the overall FFD program audit required under 26.41</i>						
		Annual number of auditor labor hours to audit the management of worker fatigue	HOURS Auditor	40.0 hr	Assumption	
		Annual number of clerical labor hours to assist with the audit of fatigue management	HOURS Clerical	16.0 hr	Assumption	
		Annual number of manager labor hours to assist with the audit of fatigue management program	HOURS Manager	16.0 hr	Assumption	
		Multiplier to yield annualized costs	PER Annualized	50%	Calculated	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<b>Calculating Work Hours</b>					<b>Subpart I</b>	<b>26.205(b)</b>
<i>One-time cost per program to modify existing timekeeping systems in order to record, track, and document the actual hours worked by individuals covered under the individual work hour controls of paragraph 26.205(d)</i>						
		One-time cost per facility to modify existing timekeeping systems, or develop new systems, to record and track work hour data	COST System	\$50,000	Exhibit A2-16	
<i>Annual costs per program associated with monitoring and managing the hours actually worked by individuals, including filing or backing up work hour records</i>						
		Annual hours of supervisor labor to monitor and manage the hours actually worked by individuals at one facility, including filing or backing up work hour records	HOURS Supervisor_Annual	200.0 hr	Assumption	
		Annual hours for clerical labor to monitor and manage the hours actually worked by individuals at one facility, including filing or backing up work hour records	HOURS Clerical_Annual	50.0 hr	Assumption	
<b>Scheduling Work Hours</b>					<b>Subpart I</b>	<b>26.205(c)</b>
<i>One-time cost per program to renegotiate collective bargaining agreements in order to address issues related to the assignment of overtime</i>						
		One-time hours needed for licensee management to work with union representatives in collective bargaining	HOURS Management	60.0 hr	Assumption	
		One-time hours needed for licensee legal staff to work with union representatives in collective bargaining	HOURS Legal	40.0 hr	Assumption	
		Percentage of licensees whose schedule modifications lead to revisions to collective bargaining agreements or to discussions with employee committees	PER Negotiation	100%	Assumption	
<i>Annual costs per program to prepare modified work schedules on an ongoing basis for all employees covered by the rule</i>						
		Annual hours needed for workers to support supervisors in reviewing, analyzing, and modifying schedules	HOURS Scheduler	2,080 hr	Assumption	
<b>Outage Day-off Requirements</b>					<b>Subpart I</b>	<b>26.205(d)(4)-(6)</b>
<b>The following variables are used in several of the equations in this section</b>						
		Number of weeks in modeled refueling outage	WEEKS Outage	6	Exhibit A2-16	
		Number of outage work hours permitted under the former rule	HOURS Outage Pre-Rule	72.0 hr	Assumption	
		Number of outage work hours permitted under the final rule for operators and HP/Chem	HOURS Outage Post-Rule	67.2 hr	Assumption	
		Adjustment factor to annualize modeled outages at single unit sites that do not occur annually	FACTOR Single Unit Site Outage	0.55	Assumption	
		Adjustment factor to annualize modeled outages at dual unit sites that do not occur annually	FACTOR Dual Unit Site Outage	1.1	Assumption	
		Adjustment factor to annualize modeled outages at triple unit sites that do not occur annually	FACTOR Triple Unit Site Outage	2	Assumption	
		Number of single unit facilities	NUM Single Unit Facilities	29	NRC Information Digest	
		Number of dual unit facilities	NUM Dual Unit Facilities	34	NRC Information Digest	
		Number of triple unit facilities	NUM Triple Unit Facilities	2	NRC Information Digest	
<i>Annual costs to pay for in processing of additional contract maintenance staff during outages to replace lost outage work hours from permanent operator staff at single and multi-unit sites</i>						
		Average number of permanent operators at a single unit site (pre-rule)	NUM Baseline Operators	90	Work hours data collection	
		The average cost to conduct in-processing of one contract maintenance or engineering worker	COST Process_Maintenance/Engineer	\$1,000	Exhibit A2-16	
<i>Annual costs to pay for in processing of additional contract HP/Chem staff during outages to replace lost outage work hours from permanent HP/Chem staff at single and multi-unit sites</i>						
		Average number of HP/Chem workers per single unit site (pre-rule)	NUM Baseline HP/Chem	45	Data from four single-unit sites	
		The average cost to conduct in-processing of one contract HP/Chem worker	COST Process_HP/Chem	\$1,000	Exhibit A2-16	
<i>Annual costs to pay for in processing and wages of additional contract HP/Chem staff during outages to replace lost outage work hours from contract HP/Chem staff at single and multi-unit sites</i>						
		Average number of Contract HP/Chem workers per reactor (pre-rule)	NUM Baseline Contract HP/Chem	46	Assumption	
		The average cost to conduct in-processing of one contract HP/Chem worker	COST Process_HP/Chem	\$1,000	Exhibit A2-16	
		The weekly cost of one contract HP/Chem worker	WCOST Contract_HP/Chem	\$4,040	Is equal to the regular wage * 40 + the overtime wage * 27.2	
<i>Annual costs to pay for in processing of additional contract maintenance staff during outages to replace lost outage work hours from permanent operator staff who are added to the skeleton crew for the operating unit at multi-unit sites</i>						
		Number of additional contract maintenance workers needed at a dual-unit site to compensate for the lost work hours of a permanent operator based at a co-located operating unit	NUM Replacements for Operators_Outage Unit (Dual)	4	NRC data collection	
		Number of additional contract maintenance workers needed at a triple-unit site to compensate for the lost work hours of a permanent operator based at a co-located operating unit	NUM Replacements for Operators_Outage Unit (Triple)	8	Assumption	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section
<i>Annual costs to pay for in processing of additional contract maintenance staff during outages to replace lost outage work hours from permanent maintenance staff who are added to the skeleton crew for the operating unit at multi-unit sites</i>						
		Number of additional contract maintenance workers needed at a dual-unit site to compensate for the lost work hours of a permanent maintenance workers based at a co-located operating unit	NUM Replacements for Maintenance_Outage Unit (Dual)	3	NRC data collection	
		Number of additional contract maintenance workers needed at a triple-unit site to compensate for the lost work hours of a permanent maintenance workers based at a co-located operating unit	NUM Replacements for Maintenance_Outage Unit (Triple)	6	Assumption	
<i>Annual costs to pay for in processing of additional contract HP/Chem staff during outages to replace lost outage work hours from permanent HP/Chem staff who are added to the skeleton crew for the operating unit at multi-unit sites</i>						
		Number of additional contract HP/Chem workers needed at a dual-unit site to compensate for the lost work hours of permanent HP/Chem workers based at a co-located operating unit	NUM Replacements for HP/Chem_Outage Unit (Dual)	2	NRC data collection	
		Number of additional contract HP/Chem workers needed at a triple-unit site to compensate for the lost work hours of permanent HP/Chem workers based at a co-located operating unit	NUM Replacements for HP/Chem_Outage Unit (Triple)	4	Assumption	
<i>Annual costs to pay for in processing of additional contract maintenance staff during outages to replace lost outage work hours from permanent operator staff who are part of the non-skeleton crew staff that continues to support the outage at multi-unit sites</i>						
		Number of operators on the non-skeleton crew currently at a dual unit site	NUM Baseline Operators - Non Skeleton Crew (Dual)	60	Assumption	
		Number of operators on the non-skeleton crew currently at a triple unit site	NUM Baseline Operators - Non Skeleton Crew (Triple)	120	Assumption	
<i>Annual costs to pay for in processing of additional contract HP/Chem staff during outages to replace lost outage work hours from permanent HP/Chem staff who are part of the non-skeleton crew staff that continues to support the outage at multi-unit sites</i>						
		Number of HP/Chem on the non-skeleton crew currently at a dual unit site	NUM Baseline HP/Chem - Non-Skeleton Crew Dual Unit site	32	Assumption	
		Number of HP/Chem on the non-skeleton crew currently at a triple unit site	NUM Baseline HP/Chem - Non-Skeleton Crew Triple unit site	64	Assumption	
<i>Pre-Order Baseline: Annual Costs to pay for in-processing of additional outage security staff</i>						
		The average pre-order number of affected permanent security staff per facility	NUM Perm_Sec	77	Assumption	
		Average number of weekly work hours per security worker pre-order	HOURS Sec_Outage_pre-order	72	Assumption	
		Average number of weekly work hours per security worker post-rule	HOURS Sec_Outage_post-rule	60	Assumption	
		The average cost to conduct in-processing of one contract security staff person	COST Process_Sec	\$1,000	Exhibit A2-16	
		Annualizing factor for outage frequency - all sites	FACTOR Outage	0.9	Assumption	

Activity	Equation	Parameter Description	Parameter	Value	Source	Section	
<b>Waivers from Individual Work Hour Limits</b>						<b>Subpart I</b>	<b>26.207</b>
<i>Annual cost per program to conduct and document a fatigue assessment</i>							
		Number of weeks per year during which facilities experience outage conditions (refueling and unplanned outages)	WEEKS Outage	8	Exhibit A2-16		
		The costs per week under outage conditions incurred by facilities as a result of their restricted ability to grant waivers	WEEKLYCOSTS Outage	\$25,689	Appendix 3		
		Number of weeks per year during which facilities experience full power conditions	WEEKS Power	44	Exhibit A2-16		
		The costs per week under at-power conditions incurred by facilities as a result of their restricted ability to grant waivers	WEEKLYCOSTS Power	\$1,087	Appendix 3		
<b>Self-Declarations of Fatigue</b>						<b>Subpart I</b>	<b>26.209</b>
<b>The following variables are used in several of the equations in this section</b>							
		Total annual number of persons, per site, granted waivers from the requirements contained in 26.205(d)(1) - (5)(i)	NUM Waivers	15	Assumption		
		Percentage of NUM Waivers that self-declare to a condition of fatigue	PER Self-Declare	10%	Assumption		
<i>Annual management cost per program to call in replacement workers to substitute for any workers who are sent home to rest following a fatigue assessment</i>							
		Supervisor hours expended to identify and call in a replacement worker	HOURS Supervisor	0.5 hr	Assumption		
<i>Annual cost per program due to the extra turnover associated with the replacement worker and other lost productivity</i>							
		Labor hours resulting from an additional turnover due to the replacement of a fatigued worker with a substitute worker	HOURS Turnover	1.0 hr	Assumption		
<i>Annual incremental labor costs associated with the replacement worker</i>							
		Average number of hours worked by the replacement worker per incident	HOURS Substitute	6.0 hr	Assumption		
<b>Work Hour Control Reviews</b>						<b>Subpart I</b>	<b>26.205(e)</b>
<i>Annual cost per program to conduct work hour control reviews</i>							
		Annual number of times a facility will review the control of work hours for individuals who are subject to this subpart	NUM Reviews	1	Assumptions		
		Time per participating supervisor to review overtime hours under final rule, per review	HOURS Review	4.0 hr	Assumption		
		Number of supervisors participating in the review	NUM Manager	4	Assumption		
		Annual time for manager to review overtime hours under existing technical specifications	HOURS former_Review	4.0 hr	Assumption		

Activity	Equation	Parameter Description	Parameter	Value	Source	Section	
<b>Fatigue Assessments</b>						<b>Subpart I</b>	<b>26.211(a)-(d)</b>
<b>The following variables are used in several of the equations in this section</b>							
		Total annual number of fatigue assessments per reactor, including those conducted for-cause, self-declared, post-event, and follow-up	NUM Assessments	50	Assumption		
		Percentage of fatigue assessments that result in a finding of fatigue	PER Fatigue	37.5%	Assumption		
<i>Annual cost per program to conduct a fatigue assessment for cause, for self-declaration, post-event, and follow-up</i>							
		Hours needed to complete one fatigue assessment	HOURS Assessment	0.5 hr	Assumption		
<i>Annual cost per program to resolve challenges that may be brought by workers who, after self-declaring to a state of fatigue, object to negative results from their fatigue assessment</i>							
		Annual number of self-declarations of fatigue per facility	NUM Self-Declarations	20	Assumption		
		Percent of annual number of self-declarations of fatigue per facility where the results of the fatigue assessment are negative	PER Not_Fatigued	50%	Assumption		
		Percent of negative fatigue assessment results that are challenged by workers	PER Object	30%	Assumption		
		Amount of worker time to raise and resolve one incident	HOURS Worker	0.5 hr	Assumption		
		Number of hours of Employee Concerns Manager time to raise and resolve one incident	HOURS ECM	2.5 hr	Assumption		
		Number of hours of supervisor time to raise and resolve one incident	HOURS Supervisor	1.0 hr	Assumption		
<b>Post-Fatigue Assessment Controls and Conditions</b>						<b>Subpart I</b>	<b>26.211(e)</b>
<b>The following variables are used in several of the equations in this section</b>							
		Total annual number of fatigue assessments per reactor, including those conducted for-cause, self-declared, post-event, and follow-up	NUM Assessments	50	Assumption		
		Percentage of fatigue assessments that result in a finding of fatigue	PER Fatigue	37.5%	Assumption		
<i>Annual cost per program to call in replacement workers to substitute for any workers who are sent home to rest following a fatigue assessment</i>							
		Supervisory hours expended to identify and call in a replacement worker	HOURS Supervisor	0.5 hr	Assumption		
<i>Annual cost per program resulting from extra "turnover" of duties to the replacement worker and other lost labor productivity</i>							
		Labor hours resulting from an additional turnover due to the replacement of a fatigued worker with a substitute worker	HOURS Turnover	1.0 hr	Assumption		
<i>Annual costs per program associated with the replacement worker</i>							
		Average number of hours worked by the replacement worker per incident	HOURS Substituted	6.0 hr	Assumption		
<b>Documenting Fatigue Assessments</b>						<b>Subpart I</b>	<b>26.211(f)</b>
<i>Annual costs per program to document the results of any fatigue assessments conducted, the circumstances that necessitated the fatigue assessment, and any controls and conditions that were implemented</i>							
		Total annual number of fatigue assessments per reactor, including those conducted for-cause, self-declared, post-event, and follow-up	NUM Assessments	50	Assumption		
		Time needed to document a fatigue assessment	HOURS Document	0.33 hr	Assumption		
<b>Summarize Fatigue Assessment Data</b>						<b>Subpart I</b>	<b>26.211(g)</b>
<i>Annual cost per program to report the number of fatigue assessments conducted during the previous calendar year, the conditions under which each fatigue assessment was conducted, and the management actions, if any, resulting from</i>							
		Annual number of clerical labor hours to review and tally the number of fatigue assessments conducted during the previous calendar year, identify the conditions under which each fatigue assessment was conducted, and report the management actions, if any, resulting from each fatigue assessment included in the FFD program report	HOURS Clerical	20.0 hr	Assumption		
		Annual number of manager labor hours to review the summary information to be sent to NRC	HOURS Manager	10.0 hr	Assumption		

**Exhibit A2 - 16:  
Fatigue Input Data**

**FATIGUE - SECURITY COMPENSATION AND HIRING COSTS**

Data Element	Estimate	Source
COST/Sec_Hire_Contract - The one-time cost to hire, process, and conduct initial training of an outage security worker	\$1,000	Assumption

**FATIGUE - MAINTENANCE COMPENSATION AND HIRING COSTS**

Data Element	Estimate	Source
COST/Process_Maint - The average cost to conduct in-processing of one contract maintenance worker	\$1,000	Assumption

**FATIGUE PROVISIONS - IMPLEMENTATION COST VARIABLES**

**Cost/System - One-time cost per facility to modify existing timekeeping systems, or develop new systems, to record and track work hour data**

PLANT	Estimate	Source Data	Comments
A		\$500	Source data were provided by six facilities.
B		\$250,000	
C		minimal	
D		TBD	
E		no estimate	
F		\$50,000	
<b>Cost/System</b>	<b>\$50,000</b>		

Data Element	Estimate	Source Data	Comments
Average U.S. Nuclear Refueling Outage: NEI - Plant Performance data, in weeks		5.71	Accessed 1/5/2005
<b>Rounded Estimate</b>	<b>6</b>		

**WEEKS/Outage - Number of weeks per year during which facilities experience outage conditions (refueling and unplanned outages)**

Data Element	Estimate	Source Data	Comments
Assuming capacity factor of 85%		7.80	Multiply 15% by 52 weeks
<b>Rounded Estimate</b>	<b>8</b>		

**WEEKS/Power - Number of weeks per year during which facilities experience full power conditions**

Data Element	Estimate	Source Data	Comments
Assuming capacity factor of 85%		44.20	Multiply 85% by 52 weeks
<b>Rounded Estimate</b>	<b>44</b>		

**FATIGUE - HP/CHEM COMPENSATION AND HIRING COSTS**

Data Element	Estimate	Source
one contract HP/Chem worker	\$1,000	Assumption

## Crosswalk Index of Subpart Sections and Exhibits

Subpart	Section	Section Description	Exhibits
NA	NA	NRC Implementation - One-time Training	Exhibit A2 - 2: Written Policies and Procedures
NA	NA	NRC Implementation - One-time Revision of Inspection Procedures	Exhibit A2 - 3: Training and Examinations
Subpart A	26.4(g)	FFD Program Personnel Subject to the Rule	Exhibit A2 - 1: Individuals Subject to the FFD Program
Subpart A	26.4(j)	Individuals Subject to Another Acceptable Program	Exhibit A2 - 1: Individuals Subject to the FFD Program
Subpart B	26.33	Behavioral Observation	Exhibit A2 - 6: Activities Related to Potential Policy Violations
Subpart B	26.27(a)	Policy and Procedure Revisions - Overall Program	Exhibit A2 - 2: Written Policies and Procedures
Subpart B	26.29(a)	Revise and Implement Training, Including Behavioral Observation	Exhibit A2 - 3: Training and Examinations
Subpart B	26.29(b)	Comprehensive Examination	Exhibit A2 - 3: Training and Examinations
Subpart B	26.29(c)(2)	Comprehensive Examination in Lieu of Refresher Training	Exhibit A2 - 3: Training and Examinations
Subpart B	26.31(b)(1)(i)	Background Checks, Psychological Evaluations, Credit History, Criminal History	Exhibit A2 - 1: Individuals Subject to the FFD Program
Subpart B	26.31(b)(2)	DOT-Approved Specimen Collection Facilities	Exhibit A2 - 1: Individuals Subject to the FFD Program
Subpart B	26.31(d)(2)	Reasonable Effort to Track Randomly Selected Individuals for Testing	Exhibit A2 - 6: Activities Related to Potential Policy Violations
Subpart B	26.31(d)(3)	Forensic Toxicologist Review of More Stringent Cutoff Levels	Exhibit A2 - 4: Audits, Inspections, Certifications and Corrective Action
Subpart B	26.37(d)	Disclosure requirements positive test results	Exhibit A2 - 6: Activities Related to Potential Policy Violations
Subpart B	26.39(c)	Review of FFD Policy Violations	Exhibit A2 - 6: Activities Related to Potential Policy Violations
Subpart B	26.41(b)	Audit Frequency	Exhibit A2 - 4: Audits, Inspections, Certifications and Corrective Action
Subpart B	26.41(c)(2)	Elimination of Audit Duplication of HHS-Certified Laboratories	Exhibit A2 - 4: Audits, Inspections, Certifications and Corrective Action
Subpart C	26.55(a)(1)	Self-Disclosure for Initial Applicants	Exhibit A2 - 5: Authorizations
Subpart C	26.55(a)(2)	Suitable Inquiry for Initial Applicants	Exhibit A2 - 5: Authorizations
Subpart C	26.55(a)(3)	Pre-Access Testing for Initial Applicants	Exhibit A2 - 5: Authorizations
Subpart C	26.55(a)(4)	Random Testing Pool for Initial Applicants	Exhibit A2 - 5: Authorizations
Subpart C	26.57(a)(1)	Self Disclosure for Update Applicants	Exhibit A2 - 5: Authorizations
Subpart C	26.57(a)(2)	Suitable Inquiry for Update Authorization	Exhibit A2 - 5: Authorizations
Subpart C	26.57(a)(3)	Pre-Access Testing for Update Applicants	Exhibit A2 - 5: Authorizations
Subpart C	26.57(a)(4)	Random Testing Pool for Update Applicants	Exhibit A2 - 5: Authorizations
Subpart C	26.59(a)(1)	Authorization Reinstatements with Interruptions: Self-Disclosure for Reinstatement Applicants with 31-365 Day Interruption	Exhibit A2 - 5: Authorizations
Subpart C	26.59(a)(2)	Authorization Reinstatements with Interruptions: Suitable Inquiry for Reinstatement Applicants with 31-365 Day Interruption	Exhibit A2 - 5: Authorizations
Subpart C	26.59(a)(3)	Authorization Reinstatements with Interruptions: Pre-Access Testing for Reinstatement Applicants with 31-365 Day Interruption	Exhibit A2 - 5: Authorizations
Subpart C	26.59(a)(4)	Authorization Reinstatements with Interruptions: Random Testing Pool for Reinstatement Applicants with 31-365 Day Interruption	Exhibit A2 - 5: Authorizations
Subpart C	26.59(c)(1)	Authorization Reinstatements with Interruptions: Self-Disclosure (and Suitable Inquiry) for Reinstatement Applicants with Less than 31 Day Interruption	Exhibit A2 - 5: Authorizations
Subpart C	26.59(c)(2)	Authorization Reinstatements with Interruptions: Pre-Access Testing for Reinstatement Applicants with Less than 31 Day Interruption	Exhibit A2 - 5: Authorizations
Subpart C	26.59(c)(3)	Authorization Reinstatements with Interruptions: Random Testing Pool for Reinstatement Applicants with Less than 31 Day Interruption	Exhibit A2 - 5: Authorizations



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Subpart E	26.103	FFD Manager Determines Confirmed Positive Test for Alcohol (BAC 0.02 < 0.04)	Exhibit A2 - 8: Alcohol Testing
Subpart E	26.119	Shy Bladder Medical Evaluation	Exhibit A2 - 7: Urine Specimen Collections
Subpart E	26.127	Licensee Testing Facility Policy and Procedure Revisions	Exhibit A2 - 2: Written Policies and Procedures
Subpart E	26.105(b)	Urine Collection: Inspecting Contents of Donor's Pockets	Exhibit A2 - 7: Urine Specimen Collections
Subpart E	26.109(a)	Urine Specimen Quantity: Minimum Quantity of 30 mL	Exhibit A2 - 7: Urine Specimen Collections
Subpart E	26.109(b)(2)	Urine Specimen: At Least 30 mL, but Less than Predetermined Quantity	Exhibit A2 - 7: Urine Specimen Collections
Subpart E	26.83(a)	Blood Collection for Confirmatory Alcohol Testing	Exhibit A2 - 8: Alcohol Testing
Subpart E	26.85(a),(b)	Urine and Alcohol Collector Training	Exhibit A2 - 3: Training and Examinations
Subpart E	26.89(b)(2)	Urine Collection: Donors Without Adequate ID	Exhibit A2 - 7: Urine Specimen Collections
Subpart E	26.89(b)(3)	Urine Collection: Eliminate Listing Medications on the CCF Form and add description of testing process	Exhibit A2 - 7: Urine Specimen Collections
Subpart E	26.91(b)	Purchase of EBT and Calibration Equipment and Related Training	Exhibit A2 - 8: Alcohol Testing
Subpart E	26.91(c)	Required Use of an EBT on the NHTSA CPL for Confirmatory Testing	Exhibit A2 - 8: Alcohol Testing
Subpart E	26.95(c)	One Breath Specimen Collection for Initial Alcohol Test	Exhibit A2 - 8: Alcohol Testing
Subpart E	26.99(b)	Lowering Initial BAC Requiring Confirmatory Test to BAC 0.02	Exhibit A2 - 8: Alcohol Testing
Subpart F	26.133	Change Cutoff Levels for Marijuana and Opiates - Onsite Testing Facilities	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart F	26.131(b)	Initial Validity Testing - Onsite Licensee Testing Facilities	Exhibit A2 - 3: Training and Examinations
Subpart F	26.131(b)	Validity Testing (On-site Licensee Testing Facilities and HHS-Certified Laboratories)	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart F	26.131(b)	Initial Validity Testing - Onsite Licensee Testing Facilities	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart F	26.137(e)(6)	Quality Control Specimens in Each Analytical Run - Onsite Testing Facilities	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart F	26.139(d)	Licensee Testing Facility Reporting of Testing Data to FFD program (Monthly to Annually)	Exhibit A2 - 10: Reporting Requirements
Subpart G	26.153(e)	Pre-Award Inspections of HHS-Certified Laboratories	Exhibit A2 - 4: Audits, Inspections, Certifications and Corrective Action
Subpart G	26.161(b)(1)	Validity Testing (On-site Licensee Testing Facilities and HHS-Certified Laboratories)	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart G	26.161(g)	Unidentified Interfering Substance/Adulterant - Contact MRO and Specimen Retesting	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart G	26.163(a)(1)	Change Cutoff Levels for Marijuana and Opiates - HHS-Certified Laboratories	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart G	26.165(b)	Retesting of Single Collection Specimens with Confirmed Positive Drug and/or Validity Test Results	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart G	26.168(a)(1)	Blind Sample Testing - 1st Quarter of Contract with a HHS-Certified Laboratory	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart G	26.168(a)(2)	Blind Sample Testing - Contracts with HHS-Certified Laboratories Older Than 90 Days	Exhibit A2 - 9: Drug and validity testing (licensee testing facilities and HHS-certified laboratories)
Subpart G	26.169(k)	HHS-Certified Laboratory Reporting of Testing Data to FFD program (Monthly to Annually)	Exhibit A2 - 10: Reporting Requirements
Subpart H	26.189(b)(3)	Definition of "Potentially Disqualifying Information"	Exhibit A2 - 6: Activities Related to Potential Policy Violations
Subpart H	26.189(c)	Face-to-Face Determinations of Fitness	Exhibit A2 - 6: Activities Related to Potential Policy Violations
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Subpart I	26.209	Self-Declarations of Fatigue	Exhibit A2-15: Fatigue Inputs
Subpart I	26.203(a)-(b)	Policy and Procedures	Exhibit A2-15: Fatigue Inputs
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Subpart I	26.205(d)(4)-(6)	Outage Day-off Requirements	Exhibit A2-15: Fatigue Inputs
Subpart I	26.205(e)	Work Hour Control Reviews	Exhibit A2-15: Fatigue Inputs
Subpart I	26.211(a)-(d)	Fatigue Assessments	Exhibit A2-15: Fatigue Inputs
Subpart I	26.211(e)	Post-Fatigue Assessment Controls and Conditions	Exhibit A2-15: Fatigue Inputs
Subpart I	26.211(f)	Documenting Fatigue Assessments	Exhibit A2-15: Fatigue Inputs
Subpart N	26.713(g)	Filing of Forensic Toxicologist's Evaluation	Exhibit A2 - 10: Reporting Requirements
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Subpart N	26.719(b)	Reporting and Review of Reportable Events Due to New Validity Testing Requirements	Exhibit A2 - 10: Reporting Requirements