Appendix A:

INCREMENTAL LICENSEE ACTIVITIES AND COST EQUATIONS FOR INDIVIDUAL PROVISIONS OF THE PROPOSED RULE

A.1 SECTION 73.55: ONE-TIME COSTS FOR LICENSEES

Update Plans

Licensee submits amended Physical Security, Training and Qualification, and Safeguards Contingency Plans within 180 days of the effective date of the final rule.

Note: This calculation accounts for revisions to the Plans required by several proposed sections of the rule: [e.g., 73.55(e)(8)(vi); 73.55(e)(11)(ii); Appendix B II.C.(1); Appendix C 3.(b)(iii); Appendix C 4.(d); Appendix B III.B.(3)(C)].

Hours of senior manager time per set of plans		300.0
Wage of senior manager per hour	х	\$100
Cost of senior manager time per set of plans		\$30,000
Hours of manager time per set of plans		80.0
Wage of manager per hour	х	\$50
Cost of manager time per set of plans		\$4,000
Harmond at Million and a findance		400.0
Hours of staff time per set of plans		160.0
Wage of staff per hour	Х	\$35
Cost of staff time per set of plans		\$5,600
Hours of clerical time per set of plans		20.0
Wage of clerical worker per hour	х	\$20
Cost of clerical worker time per set of plans		\$400
Subtotal cost per set of plans		\$40,000
Number of sites		65
Percentage of sites affected	Х	100%
Total Cost		(\$2,600,000)

Amend Contracts

Licensees must amend contracts with security personnel contractors to clearly state that no individual may be issued a firearm or otherwise be assigned to an unsupervised position involving detection, assessment, or response to unauthorized activities, unless that individual has satisfied the requirements of 10 CFR 73.56 and 73.57.

Hours of manager time per site		40.0
Wage of manager per hour	Х	\$50
Cost of manager time per site		\$2,000
Hours of legal consultant time per site		20.0
Wage of legal consultant per hour	Х	\$100
Cost of legal consultant per site		\$2,000
Hours of clerical worker time per site		20.0
Wage of clerical worker per hour	Х	\$20
Cost of clerical worker time per site		\$400
Subtotal cost per site		\$4,400
Number of sites		65
Percentage of sites affected	Х	50%
Total Cost		(\$143,000)

Video Capture

The Isolation Zone video surveillance and assessment equipment must be designed to provide real-time and play-back/recorded video images in conjunction with an alarm annunciation in a manner that allows timely assessment of activities prior to and after the alarm annunciation.

Note: This calculation accounts for the video technology requirements in Sections 73.55(i)(1)(i), 73.55(i)(3), 73.55(i)(4)(iv) and 73.55(i)(7)(ii)(A) and (C).

Cost to install real-time and play-back/recorded video images in conjunction with alarm annunciation capabilities to the CAS and SAS per site
Number of sites

		(\$455,000)
Percentage of sites affected	X	5%
		65
Total Cost		\$140,000

Duplicative Capabilities in CAS and SAS

Intrusion detection systems must annunciate, and video assessment equipment images shall display concurrently in the Central Alarm Station and Secondary Alarm Station and both alarm stations must be designed and equipped with equivalent capabilities for detection, assessment, monitoring, observation, surveillance, and communications.

Cost to reconfigure intrusion detection equipment and other alarm station systems per site

Total Cost		(\$3,250,000)
Percentage of sites affected	X	25%
Number of sites		65
		\$200,000

Uninterrupted Power

Licensees must install uninterrupted power to the entire intrusion detection and assessment system.

Total Cost	(\$	\$3,003,000)
Percentage of sites affected	Х	15%
Number of sites		65
Cost to install uninterrupted power per site		\$300,000

No Single Act

Licensees must ensure that no single act can disable both the CAS and the SAS. Licensees must assess their current configuration, and as needed, make plan changes (alternative measures) or hardware modifications.

Assessment:

	2650.0
Х	\$50
	\$132,500
	4000.0
Х	\$35
	\$140,000
	\$272,500
	65
X	100%
	\$17,712,500
	х

Hardware Modifications

Cost of hardware modifications		\$750,000
Number of sites		65
Percentage of sites affected	X	30%
Subtotal cost of hardware modifications		\$14,625,000
Subtotal cost of assessment		\$17,712,500
Subtotal cost of hardware modifications	+	\$14,625,000
Total Cost		(\$32,337,500)

Cyber Security

Licensees must establish cyber security programs to protect important computer systems. This requirement will result in procedures, training, and hardware modifications.

Assessment and program implementation:

Wage of IT Manager per hour

Hours of IT Manager time per site

Total Cost	(-	\$48,425,000)
Percentage of sites affected	Х	100%
Number of sites		65
Subtotal cost		\$745,000
Cost of training per site		\$70,000
Number of people requiring training per site	Х	2000.0
Wage of staff per hour		\$35
Hours of staff time		1.0
Training:		
Cost of equipment and installation per site		\$375,000
Equipment and Installation:		
Cost of IT Staff time per site		\$150,000
Wage of IT Staff per hour	х	\$50
Hours of IT Staff time per site		3000.0
Cost of IT Manager time per site		\$150,000

2000.0

\$75

A.2 SECTION 73.55: ANNUAL COSTS FOR LICENSEES

Escort of Vehicles

Vehicles operated by an individual with unescorted access to the protected area or vital area no longer need a security escort.

Number of sites Percentage of sites affected	х	65 100%
Subtotal savings per site		\$15,000
Savings due to security escort requirement relaxation per site		\$15,000
Wage of security escort per hour Number of security escort hours needed per year per site	x	\$25 600.00
Number of hours spent per escorted vehicle Number of security escort hours needed per year per site	X	600.00
Number of vehicles entering the protected area operated by an individual with unescorted access per year per site	v	400.0 1.50

Cyber Security

Licensees must establish cyber security programs to protect important computer systems. This requirement will result in ongoing training and equipment maintenance costs.

Hours of staff time Wage of staff per hour		1.0 \$35
Number of people requiring training per site	Х	2000.0
Cost of training per site		\$70,000
Cost of cyber security equipment maintence per site		
		\$75,000
Subtotal cost of cyber security staff and equipment		
maintence per site		\$145,000
Number of sites		65
Percentage of sites affected	Х	100%
Total Cost		(\$9,425,000)

A.3 SECTION 73.56: ONE-TIME COSTS FOR LICENSEES

Records

The licensee must update and document procedures relating to the retention of records relating to unescorted access authorization program and written agreement of services.

Note: This calculation accounts for the records management activities required by the following proposed sections of the rule: 73.56(o)(2) and 73.56 (o)(4)

Total Cost	(-	\$204,750)
Percentage of sites affected	Х	100%
Number of sites		65
Subtotal cost per site		\$3,150
Cost of clerical time per set of records		\$400
Wage of clerical worker per hour	Х	\$20
Hours of clerical time per set of records		20.0
Cost of legal time per set of records		\$2,500
Wage of legal staff per hour	Х	\$100
Hours of legal time per set of records		25.0
Cost of manager time per set of records		\$250
Wage of manager per hour	Х	\$50
Hours of manager time per set of records		5.0

Protection of Information

The licensee must maintain a system of files and procedures to protect personal information. Because C/V are allowed to terminate an individual's unescorted access authorization, licensees must ensure that C/V's may have access and must protect personal information.

Note: This calculation accounts for the records management activities required by the following proposed sections of the rule: 73.56(m)(2)

Hours of manager time for approval		10.0
Wage of manager per hour	Х	\$50
Cost of manager time for approval		\$500
Hours of legal time for approval		30.0
Wage of legal staff per hour	Х	\$100
Cost of legal time for approval		\$3,000
Hours of staff time for review		50.0
Wage of staff worker per hour	Χ	\$35
Cost of staff time for review		\$1,750
Hours of clerical time for procedures		10.0
Wage of clerical worker per hour	Χ	\$20
Cost of clerical time for procedures		\$200
Subtotal cost per site		\$5,450
Number of sites		65
Percentage of sites affected	Χ	100%
Total Cost	(\$354,250)

Note: Citations to specific sections of the proposed rule may not reflect the most recent draft of the rule.

Individuals are subject to an authorization program

Any individual whose assigned duties and responsibilities permit the individual to take actions by electronic means, either on site or remotely, that could adversely impact a licensees or applicants operational safety, security, or emergency response capabilities are subject to an authorization program, and must receive a background check.

Note: This calculation accounts for the initial costs associated with 73.56(b)(1)(ii).

		10.0
Number of hours to conduct a background check		6.0
Wage of manager per hour	Х	\$50
Cost of background check per site		\$3,000
Subtotal cost per site		\$3,000
Number of sites		65
Percentage of sites affected	Х	100%
Total Cost		(\$195,000)

A.4 SECTION 73.56: ANNUAL COSTS FOR LICENSEES

Records

The licensee must document and retain records relating to individual's unescorted access authorization status and written agreement of services.

Note: This calculation accounts for the records management activities required by the following proposed sections of the rule: 73.56(o)(2) and 73.56 (o)(4)

Hours of manager time per set of records		10.0
Wage of manager per hour	Х	\$50
Cost of manager time per set of records		\$500
Hours of staff time per set of records		10.0
Wage of staff per hour	Х	\$35
Cost of staff time per set of records		\$350
Hours of clerical time per set of records		20.0
Wage of clerical worker per hour	Х	\$20
Cost of clerical time per set of records		\$400
Subtotal cost per site		\$1,250
Number of sites		65
Percentage of sites affected	Χ	100%
Total Cost		(\$81,250)

ANNUAL COSTS FOR LICENSEES (Continued)

Protection of Information

The licensee must maintain a system of files and procedures to protect personal information. Because C/V are allowed to terminate an individual's unescorted access authorization, licensees must ensure that C/V's may have access and must protect personal information.

Note: This calculation accounts for the records management activities required by the following proposed sections of the rule: 73.56(m)(2)

Hours of manager time for approval		5.0
Wage of manager per hour	X	\$50
Cost of manager time for approval		\$250
Hours of legal time for approval		5.0
Wage of legal staff per hour	X	\$100
Cost of legal time for approval		\$500
Hours of staff time for review		50.0
Wage of staff worker per hour	X	\$35
Cost of staff time for review		\$1,750
Hours of clerical time for procedures		10.0
Wage of clerical worker per hour	X	\$20
Cost of clerical time for procedures		\$200
Subtotal cost per site		\$2,700
Number of sites		65
Percentage of sites affected	Х	100%
Total Cost	(-	\$175,500)

Individuals are subject to an authorization program

Any newly hired individual whose assigned duties and responsibilities permit the individual to take actions by electronic means, either on site or remotely, that could adversely impact a licensees or applicants operational safety, security, or emergency response capabilities are subject to an authorization program, and must receive a background check.

Total Cost		(\$97,500)
Percentage of sites affected	Х	100%
Number of sites		65
Subtotal cost per site		\$1,500
Cost of background check per site		\$1,500
Wage of manager per hour	Х	\$50
Number of hours to conduct a background check		6.0
		5.0
Number of new hires needing background checks		

A.5 SECTION 73.58: ONE-TIME COSTS FOR LICENSEES

Safety/Security Interface

The licensee must assess and manage adverse effects on safety and security when implementing changes to plant configurations, facility conditions or security. To accomplish this, the licensee will need to develop and implement a set of safety/security interface procedures and provide initial training for staff.

Note: This calculation accounts for the safety-security interface activities required by the following proposed sections of the rule: 73.55(e)(8)(v), 73.55(s), and Appendix C, 7.(e).

Total Cost		(\$552,500)
Percentage of sites affected	Х	100%
Number of sites		65
Subtotal cost per site		\$8,500
Cost of manager time for training per site		\$800
Wage of manager per hour	Х	\$50
Number of hours in training		2.0
interface training		8.0
Number of managers attending initial safety-security		
Cost of clerical time per set of procedures		\$400
Wage of clerical worker per hour	Х	\$20
Hours of clerical time per set of procedures		20.0
Cost of legal time per set of procedures		\$1,500
Wage of legal staff per hour	Χ	\$100
Hours of legal time per set of procedures		15.0
Cost of staff time per set of procedures		\$2,800
Wage of staff per hour	x	\$35
Hours of staff time per set of procedures		80.0
Cost of manager time per set of procedures		\$3,000
Wage of manager per hour	Х	\$50
Hours of manager time per set of procedures		60.0

A.6 SECTION 73.58: ANNUAL COSTS FOR LICENSEES

Safety/Security Interface

The licensee must assess and manage adverse effects on safety and security when implementing changes to plant configurations, facility conditions or security. To accomplish this, the licensee will need to analyze planned maintenance actions on an ongoing basis.

Note: This calculation accounts for the safety-security interface activities required by the following proposed sections of the rule: 73.55(e)(8)(v), 73.55(s), and Appendix C, 7.(e).

Number of	planned	maintenance	actions	per	year
-----------	---------	-------------	---------	-----	------

Total Cost		(\$946,400)
Percentage of sites affected	Х	100%
Number of sites		65
Subtotal cost per site		\$14,560
actions		\$14,560
Cost of staff analysis of planned maintenance		
Wage of staff per hour	Х	\$35
maintenance action		4.0
Number of staff hours of analysis per planned		104.0
		1010

A.7 SECTION 73.71: ONE-TIME COSTS FOR LICENSEES

NRC Threat Notification

The licensee must notify the NRC Operations Center as soon as possible, but no later than 15 minutes after discovery of an imminent or actual threat against the facility. This will entail revising the facility's procedures.

Note: This calculation accounts for the proposed new requirements in Appendix G, I.

Cost of staff time per set of procedures		\$280
Hours of legal time per set of procedures		2.0
Wage of legal staff per hour	Х	\$100
Cost of legal time per set of procedures		\$200
Hours of clerical time per set of procedures		2.0
Wage of clerical worker per hour	Х	\$20
Cost of clerical time per set of procedures		\$40
Subtotal cost per site		\$620
Number of sites		65
Percentage of sites affected	Х	100%
Total Cost		(\$40,300)

A.8 SECTION 73.71: ANNUAL COSTS FOR LICENSEES

NRC Threat Notification

The licensee must notify the NRC Operations Center as soon as possible, but no later than 15 minutes after discovery of an imminent or actual threat against the facility. For the purposes of this regulatory analysis, on-going incremental costs associated with these calls are estimated in the following equation.

Subtotal cost per site Number of sites		\$17 65
, , , , ,		
Number of calls per year per site Cost of Shift Captain's time per year per site	Х	4.0 \$17
Cost of Shift Captain's time per hour		\$50
Hours of Shift Captain's time per site per call		0.08
Number of calls per year per site		4.0
Number of quarters per year	Х	4.00
Number of calls per quarter per site		1.00

A.9 PART 73, APPENDIX B: ONE-TIME COSTS FOR LICENSEES

Physical/Medical Examinations for Security Personnel

The licensee must ensure that all current security personnel who are assigned duties and responsibilities associated with detection, assessment, and response to unauthorized activities (not just the armed personnel) meet minimum vision, hearing, medical, and physical fitness qualifications.

Cost per physical and medical examination		\$400
Number of unarmed members of the security		22.2
organization hired per year per site	Х	20.0
Cost of physical and medical examinations per year		
per site		\$8,000
Hours of clerical time per site		40.0
Cost of clerical time per hour	Х	\$20
Cost of clerical time per site		\$800
Subtotal cost per site		\$8,800
Number of sites		65
Percentage of sites affected	Х	100%
Total Cost		(\$572,000)

On-The-Job Training

The licensee must provide 40 hours of on-the-job training to each currently employed member of the armed and unarmed security organization. This analysis assumes that 75 percent of reactor sites need to increase current on-the-job training hours by 40 hours for each currently employed member of the security organization. Further, contingency response personnel need an additional 40 hours of on-the-job training. In addition, training managers must document and certify on-the-job training. The analysis assumes that none of the reactor sites are currently documenting on-the-job training; therefore, 100 percent of reactor sites must complete this documentation and certification.

Number of armed and unarmed security officers per		
site		120.0
Number of additional on-the-job training hours per Wage of armed and unarmed security organziation		40.0
member per hour	х	\$25
Cost of on-the-job training for currently employed security members		\$120,000
Number of contingency response personnel		110.0
Number of additional on-the-job training hours		40.0
Wage of contingency response personnel	Х	\$25
Cost of on-the-job training for contingency response		
personnel		\$110,000
Subtotal cost per site		\$230,000
Number of sites		65
Percentage of sites affected	X	75%
Subtotal Cost for on-the-job training		\$11,212,500
Number of hours for a training manager to		
document and certify all on-the-job training per year		
		120.0
Wage of training manager	Х	\$50
Cost for on-the-job training documentation and		
certification per site		\$6,000
Subtotal Cost for on-the-job training documentation		
and certification per site		\$6,000
Number of sites		65
Percentage of sites affected		100%
Subtotal Cost for on-the-job training		
documentation and certification		\$390,000
Total Cost		(\$11,602,500)

Qualification of Security Instructors

The licensee must ensure that all security instructors receive required training to qualify them for their duties.

Total Cost		(\$390,000)
Percentage of sites affected	_X	100%
Number of sites		65
Subtotal cost per site		\$6,000
Cost of training per site		\$6,000
Number of instructors per site	X	4.0
Cost of training per instructor		\$1,500

Armorer Certification

Cost of training per staff person		\$3,200
Number of staff requiring training per site	X	2.0
Cost of training per site		\$6,400
Subtotal cost per site		\$6,400
Number of sites		65
Percentage of sites affected	X	100%
Total Cost	\ <u></u>	(\$416,000)

A.10 PART 73, APPENDIX B: ANNUAL COSTS FOR LICENSEES

Physical/Medical Examinations for Security Personnel

The licensee must ensure that all newly hired security personnel who are assigned duties and responsibilities associated with detection, assessment, and response to unauthorized activities (not just the armed personnel) meet minimum vision, hearing, medical, and physical fitness qualifications.

Cost per physical and medical examination Number of unarmed members of the security		\$400
organization hired per year	Х	5.0
Cost of physical and medical examinations per year	Ţ.	
per site		\$2,000
Hours of clerical time per site		10.0
Cost of clerical time per hour	Х	\$20
Cost of clerical time per site		\$200
Subtotal cost per site		\$2,200
Number of sites		65
Percentage of sites affected	Х	100%
Total Cost		(\$143,000)

Physical Requirements for Security Organization Personnel

The licensee must ensure that armed and unarmed members of the security organization must meet physical requirements annually. Current requirements require just armed members to meet these standards.

Cost of updating physical examination per person		\$150
Number of unarmed members of the security		
organization per site	X	20.0
Cost of updating physical examination for unarmed		
members of the security organization per site		\$3,000
Hours of clerical time per site		20.0
Cost of clerical time per hour	X	\$20
Cost of clerical time per site		\$400
Subtotal cost per site		\$3,400
Number of sites		65
Percentage of sites affected	X	100%
Total Cost		(\$221,000)

ANNUAL COSTS FOR LICENSEES (Continued)

On-the-Job Training

The licensee must provide 40 hours of on-the-job training to each new member of the armed and unarmed security organization prior to his or her assignment. This analysis assumes that 75 percent of reactor sites need to increase current on-the-job training hours by 20 hours per new hire. In addition, training managers must document and certify on-the-job training. The analysis assumes that none of the reactor sites are currently documenting on-the-job training; therefore, 100 percent of reactor sites must complete this documentation and certification.

Niconale and of the accelerate in a managed and a consequence of		
Number of newly hired armed and unarmed members of the security organization per year		20.0
Number of additional on-the-job training hours per person		40.0
Wage of armed and unarmed security organziation		40.0
member per hour	Х	\$25
Cost of newly hired armed and unarmed security		· -
organization members per site		\$20,000
Number of armed and unarmed security		
organization trainers per site		40.0
Number of additional on-the-job training hours per		10.0
person		20.0
Wage of armed and unarmed security organization		
trainers per hour	Х	\$40
Cost of armed and unarmed security organization		
trainers per site		\$32,000
Subtotal cost per site		\$52,000
Number of sites		65
Percentage of sites affected	Χ	75%
Subtotal Cost for on-the-job training		(\$2,535,000)
Number of hours for a training manager to		
document and certify all on-the-job training per year		
		20.0
Wage of training manager	х	20.0 \$50
Subtotal Cost for on-the-job training documentation	х	\$50
	х	
Subtotal Cost for on-the-job training documentation	х	\$50
Subtotal Cost for on-the-job training documentation and certification per site	X	\$50
Subtotal Cost for on-the-job training documentation and certification per site Subtotal Cost for on-the-job training documentation and certification per site Number of sites	х	\$50 \$1,000 \$1,000 65
Subtotal Cost for on-the-job training documentation and certification per site Subtotal Cost for on-the-job training documentation and certification per site Number of sites Percentage of sites affected	<u>x</u>	\$50 \$1,000 \$1,000
Subtotal Cost for on-the-job training documentation and certification per site Subtotal Cost for on-the-job training documentation and certification per site Number of sites Percentage of sites affected Subtotal Cost for on-the-job training		\$50 \$1,000 \$1,000 65 100%
Subtotal Cost for on-the-job training documentation and certification per site Subtotal Cost for on-the-job training documentation and certification per site Number of sites Percentage of sites affected		\$50 \$1,000 \$1,000 65

ANNUAL COSTS FOR LICENSEES (Continued)

Qualification of Security Instructors

The licensee must ensure that all security instructors receive requalification training every three days. For the purposes of this analysis it is assumed that instructors attend a three-day requalification training every three years. To estimate the annual cost, this analysis assumes there is one day of requalification training each year.

Cost of training per instructor per year		\$250
Number of instructors per site	X	4.0
Cost of training per year per site		\$1,000
Subtotal cost per site		\$1,000
Number of sites		65
Percentage of sites affected	X	100%
Total Cost		(\$65,000)

Armorer Certification

Cost of training per staff member per year Number of staff requiring training per site	x	\$1,067 2.0
Cost of training per year per site		\$2,133
Subtotal cost per site		\$2,133
Number of sites		65
Percentage of sites affected	<u> </u>	100%
		(\$138,667)

A.11 PART C, APPENDIX C: ONE-TIME COSTS FOR LICENSEES

None.

A.12 PART 73, APPENDIX C: ANNUAL COSTS FOR LICENSEES

Drill Exercise

Licensees must train staff in accordance with the drill exercise requirements of the proposed rule.

Cost of training per person		\$500
Number of staff requiring training	X	40.0
Cost of training per site		\$20,000
Subtotal cost per site		\$20,000
Number of sites		65
Percentage of sites affected	X	100%
	·	(\$1,300,000)

A.13 PART 73, APPENDIX G: ONE-TIME COSTS FOR LICENSEES

None. See Section 73.71.

A.14 PART 73, APPENDIX G: ANNUAL COSTS FOR LICENSEES

NRC Suspicious Activity Notification

Cost of training per Shift Captain Number of Shift Captains per site Cost of training per site	x	\$50 6.0 \$300
Cost per site Number of sites Percentage of sites affected Subtotal Cost	х	\$300 65 100% \$19,500
Hours of Shift Captain's time per site per call Cost of Shift Captain's time per hour Number of calls per year (all sites) Cost of Shift Captain's time per year (all sites)	X	0.08 \$50 388.0 \$1,552
Cost of Shift Captain's time per year (all sites) Percentage of sites affected Subtotal Cost	X	\$1,552 100% \$1,552
Subtotal Cost for Training Subtotal Cost for Reports Total Cost	+	\$19,500 \$1,552 (\$21,052)
Tampering Notification		
Cost of training per Shift Captain Number of Shift Captains per site Cost of training per site	х	\$50 6.0 \$300
Subtotal cost per site Number of sites Percentage of sites affected Subtotal Cost	x	\$300 65 100% \$19,500
Hours of Shift Captain's time per site per call Cost of Shift Captain's time per hour Number of calls per year (all sites) Cost of Shift Captain's time per year (all sites)	X	0.08 \$50 388.0 \$1,552
Cost of Shift Captain's time per year (all sites) Percentage of sites affected Subtotal Cost	x	\$1,552 100% \$1,552
Subtotal Cost for Training Subtotal Cost for Reports Total Cost	+	\$19,500 \$1,552 (\$21,052)

Note: Citations to specific sections of the proposed rule may not reflect the most recent draft of the rule.