

6:59:36
MASTER HOST B

Ack SPDS
Alarms

SPDS Overview

2525 Post
Trip Actions

fov_V4 17-FEB-05
MP2 Page 1 of 1

HARSH CTMT Conditions

Rx PWR 0.1% →
Thermal X2102.8mw X-0.3% ↓
SUR -1.6 OPM RPS
CEAs NOT IN 0 TRIP

REGISTRATION
CVCS
HPSI
SDM

	Loop 1	Loop 2
Loop ΔT	15.1 ↓	14.8 ↓
Thot	471.4 ↓	472.0 ↓
Tcold	456.3 ↓	457.2 ↓
Thot Subcool °F	-32.3 →	-32.9 →
Tcold Subcool °F	-17.1 →	-18.1 →
CET	445.7 ↓	-6.5 →
ΔTh-CET	25.8 ↓	26.3 ↓

UNSAT
UNSAT

Vital AC	Facility 1	Facility 2	NSST
25A/B	LIVE	LIVE	1 2 DEAD
24A/B	LIVE	LIVE	RSST
24C/D	LIVE	LIVE	1 2 LIVE
Vital DC	VR11/21 Normal		EDG
201A/B	LIVE	LIVE	A B DEAD
VA10/20	LIVE	LIVE	34E
SW	SAT	SAT	1 2 DEAD
RBCCW	SAT	SAT	Instrument Air 109.4 PSI

	SG1	SG2	Last trip
SG Press PSIA	892 ↓	897 ↓	2/17/05
NR Level %	19.6 ↑	22.0 ↑	6:58:26
WR Level IN	328.9 ↑	331.4 ↑	since trip
MFW GPM	0 ↓	0 ↓	+0:01:08
AFW GPM	0 →	0 →	CST Level %
N16 1.9E-03 GPM	2.7 GPD	0.0 GPD	92.7 →
TcSat Pr / open MSSVs	450 / 0	454 / 0	N16 >50% pwr

PZR Level U10.1 ↓ U
PZR Pr PSIA 378 ↓

PROTECT
CLO CLO

Charging Flow 130.9 GPM 3 pp/s
SI Flow pro SRAS U1104.1 GPM SAT
RWST Level % 96.0 ↓
RX Vessel Level 0.0% -51.0% above

Termination
Criteria
LPSI HPSI
MET NOT MET

CTMT
TEMP °F 260.7 ↑
PRESS PSIG 40.2 ↑
H2 not aligned % 0.0
Sump derived RCS leakrate X14.3 GPM
SUMP % R99.4 ↑ UNEX RISE

RECOME: SAT
PURGE: UNSAT
1 - SPRAY 2
SAT SAT

CAR FANS:
A SLOW
B SLOW
C SLOW
D SLOW

1 2	SIAS
1 2	CIAS
1 2	EBFAS
1 2	MSI
1 2	CSAS
1 2	SRAS

Fac	In-Cam	Outside-Cam	Steam Plant	Other
4	0	0	0	2

SPDS Overview Navigation Buttons: R, V, I, P, S, HR, HR, CI, STPC, LOGC, etc.

Inside CTMT Rad: 4

Radiation Monitor	Value	Rise	lim / floor / db
R7890 Personnel Access UNEXPLAINED RISE	758.11	↑	mr/hr 400/50/1
R7891 CTMT Refuel Floor UNEXPLAINED RISE	725.12	↑	mr/hr 500/5/1
R8240 CTMT Area Hi Rng UNEXPLAINED RISE	1.28	→	R/hr 5/2/1
R8241 CTMT Area Hi Rng UNEXPLAINED RISE	2.02	↑	R/hr 5/2/1
RM8123A Z1 CTMT Part.	2520.00	→	cpm 7e4/6e3/4
RM8123B Z1 CTMT Gas	2025.10	→	cpm 7e4/2500/55
RM8262A Z2 CTMT Part.	2490.00	→	cpm 7e4/6e3/4
RM8262B Z2 CTMT Gas	2014.50	→	cpm 7e4/2500/55

Steam Plant Rad: 0

Radiation Monitor	Value	Rise	lim / floor / db
R5099 SJAЕ	98.10	→	cpn 200/100/25
R4262 SG Blowdown	172.80	→	cpr 1000/300/25
R4299A Main Stm A	R7.00E-04	→	R/hr 03/02/4**
R4299B Main Stm B	R9.40E-04	→	R/hr 03/02/25**
R4299C Main Stm C	R7.81E-04	→	R/hr 03/02/4**

** db larger than span

Outside CTMT Rad: 0

Radiation Monitor	Value	Rise	lim / floor / db
R7894 Charging Pump	8.90	→	mr/hr 150/55/1
R7895 Pri Sample Sink	0.66	→	mr/hr 25/5/1
R7896 EL-25 Waste	0.49	→	mr/hr 25/4/1
R7897 EL-45 Waste	3.00	→	mr/hr 50/2/1
R8132A U2 Stk Part	118.65	→	cpm 2e3/200/25
R8132B U2 Stk Gas	12.89	→	cpm 500/50/25
RIC8168 U2 WR stk rad	4.97E-03	→	uccc 02/01/4
R8169 stk gas from EBFS	8.72E-07	→	uccc 07/01/4
R6038 RBCCW	640.88	→	cpm 1.5e3/1e3/25**

Other (unex rise inputs): 2

Radiation Monitor	Value	Rise	lim / floor / db
R7892 Drum Decon	2.00	→	mr/hr 150/4/1
R7899 Control Room	0.12	→	mr/hr 2/1/4/1
R202 Letdown	25189.49	→	cpm 4e5/1e5/25
R202A Failed Fuel OUT OF SERVICE	269.92	→	cpm 1e4/600/25
R9327 Cond Recirc TK	424.30	→	cpm 1700/500/25
R8434A Aux Bldg Part	269.20	→	cpm 1500/100/25
R8434B Aux Bldg Gas	29.60	→	cpm 100/40/25
R8997 Chg Pump Area	1500.00	→	cpm 1.2e4/500/25
R8998 VCT Area	363.21	→	cpm 1.2e4/600/4
RM8139 Spent Fuel S.W.	0.50	→	mr/hr 2/1/1/1
RM8142 Spent Fuel N.W.	1.00	→	mr/hr 50/2/1/1
RM8156 Spent Fuel N.E.	1.19	→	mr/hr 50/2/1/1
RM8157 Spent Fuel S.E.	4.50	→	mr/hr 50/2/1/1

Non-logarithmic - not part of ctmt integrity, but may affect CSF status

L9155 CTMT Sump Level UNEXPLAINED RISE	R99.41	↑	% 75/001/1
CTMTPR CTMT Pressure UNEXPLAINED RISE	43.23	↑	psig 7/001/6
CTMT Temperature	264.79	↑	°F

CTMT not challenged

If description is cyan color, value is a CSF checklist parameter
Limits, Floors, Deadbands, and OOS are controlled by data:spd_lsq.txt (//Mpnwcl_data1_server\data1\http\inde_electrical_projects\mp2_spd\spd_lsq.doc)

Navigation buttons: [Back] [Home] [Print] [Refresh] [Clear] [CT] [CTPC] [CCGC] [PT Curve] [S. Box Curve] [TRENDS] [Previous Display]

Attachment 1
Fixed Setpoint Radiation Monitors
(Sheet 1 of 1)

MONITOR	TYPE	FUNCTION	LOCATION(S)
RM-8139	Area Monitor	SFP Storage Area (S.W.)	RC-14A, ESAS Channel "A"
RM-8142	Area Monitor	SFP Storage Area (N.W.)	RC-14B, ESAS Channel "B"
RM-8156	Area Monitor	SFP Storage Area (N.E.)	RC-14C, ESAS Channel "C"
RM-8157	Area Monitor	SFP Storage Area (S.E.)	RC-14D, ESAS Channel "D"
RM-8132B	Process	Unit 2 Stack Discharge Gaseous	RC-14C, C-06
RM-9049	Process	Clean Liquid Waste Discharge	RC-14C, PIOPS
RM-9116	Process	Aerated Liquid Waste Discharge	RC-14C, PIOPS
RM-9095	Process	Waste Gas Discharge	RC-14A,
RE-245	Process	CPF TK-10/11 Liquid Discharge	Local, CPF Rad Mon Panel
RM-8240	Area Monitor	CTMT Post-Incident 14'6" East	C-101
RM-8241	Area Monitor	CTMT Post-Incident 14'6" West	C-101
RM-8168A	Ventilation	High Range Stack, Particulate	C-101, 31'6" Switchgear
RM-8168B	Ventilation	High Range Stack, Gaseous	C-101, 31'6" Switchgear
RM-9799A	Ventilation	Control Room Intake, Facility 1	C-101
RM-9799B	Ventilation	Control Room Intake, Facility 2	C-101
RM-4299A	Process	Main Steam Line, No. 1	RC05E
RM-4299B	Process	Main Steam Line, No. 1	RC05E
RM-4299C	Process	Main Steam Line, No. 2	RC05E
RM-8123A	Ventilation	Z1 Containment Particulate	RC-14A, ESAS Channel "A"
RM-8123B	Ventilation	Z1 Containment Gaseous	RC-14C, ESAS Channel "C"
RM-8262A	Ventilation	Z2 Containment Particulate	RC-14B, ESAS Channel "B"
RM-8262B	Ventilation	Z2 Containment Gaseous	RC-14D, ESAS Channel "D"
RM-8169	Ventilation	Unit 2 Millstone Stack WRGM	RC-14E

Level of Use Continuous

STOP THINK ACT REVIEW

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Attachment 2
Applicable Radiation Monitors
(Sheet 1 of 1)

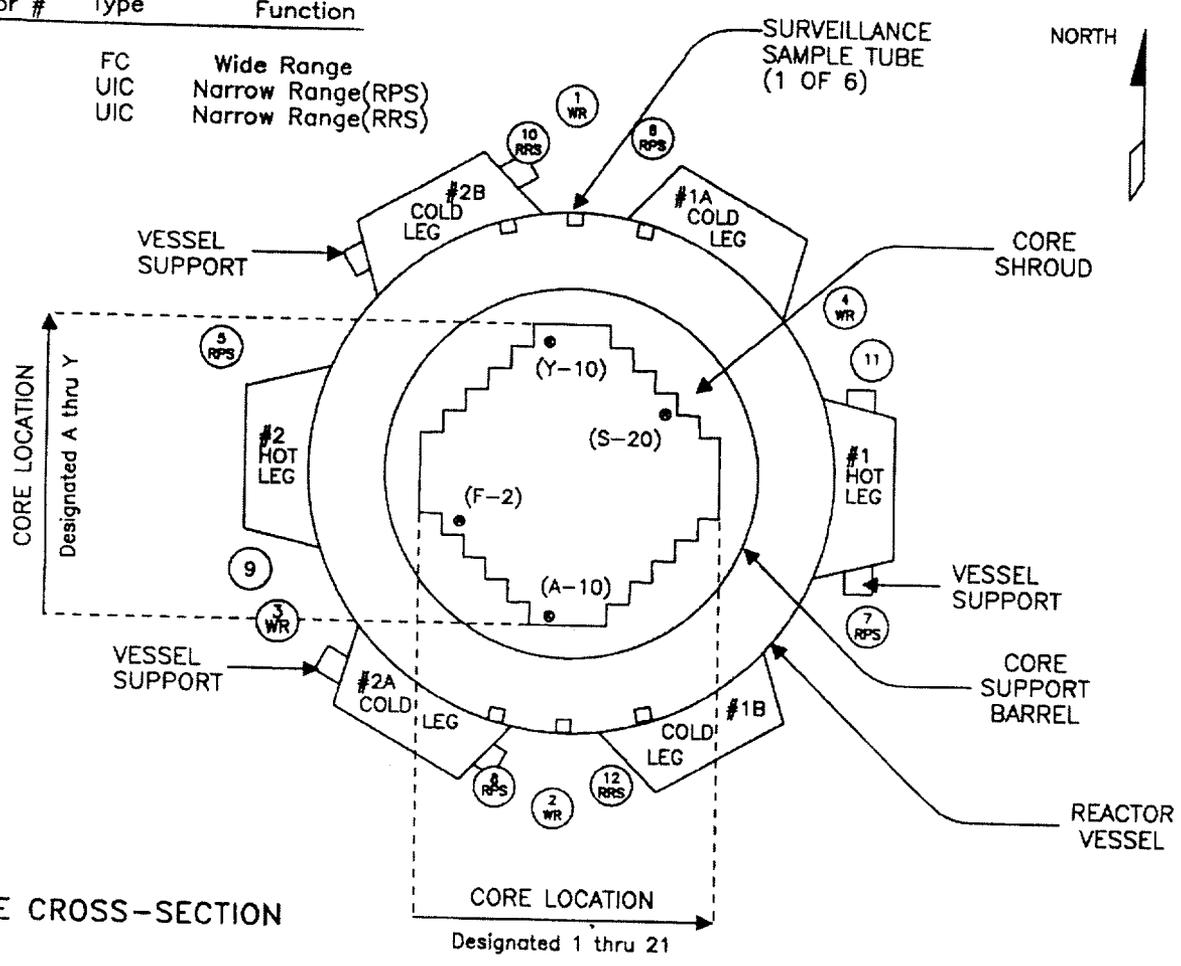
MONITOR	FUNCTION	TYPE
RM-6038	RBCCW Gross Activity	Process
RM-9327	Cond Recovery Tank Gross Activity	
RM-8132A	Unit 2 Stack Particulate	
RM-202A	Failed Fuel Activity	
RM-202B	Letdown Gross Activity	
RM-8434A	Aux Bldg Particulate (Evap, Waste Gas, AW Tk Farm)	Ventilation
RM-8434B	Aux Bldg Gaseous (Evap, Waste Gas, AW Tk Farm)	
RM-8011	Control Room Gross Activity	
RM-8145A	Spent Fuel Pool Exhaust, Particulate	
RM-8145B	Spent Fuel Pool Exhaust, Gaseous	
RM-8997	Radwaste Exhaust Particulate (Degasifier, Chg PP, ESF Rms)	
RM-8998	Radwaste Exhaust Particulate (Sample Sink, Letdown HX, VCT)	
RM-8999	Radwaste Exhaust Particulate (Evap, Waste Gas, AW Tk Farm)	Area Monitor
RM-7892	Drum Decon Area	
RM-7894	Charging Pump Area	
RM-7895	Primary Sample Sink Area	
RM-7896	-25'6" Waste Process Area	
RM-7897	-45'6" Waste Process Area	
RM-7899	Control Room Area	
RM-9813	Resin Drumming, -45'6" Auxiliary Building	Liquid
RM-4262	S/G Blowdown Gross Activity	
RM-5099	Steam Jet Air Ejector	On-Line Process
RM-7890	Personnel Access Area	Area Monitor
RM-7891	Containment Refuel Floor Area	

Level of Use Continuous

STOP THINK ACT REVIEW

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Detector #	Type	Function
1-4	FC	Wide Range
5-8	UIC	Narrow Range(RPS)
10 & 12	UIC	Narrow Range(RRS)



CORE CROSS-SECTION

Figure 2

M2|10/24/86|86001666

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

January 4, 2002

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators each with a separate fuel oil supply tank containing a minimum of 12,000 gallons of fuel.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Inoperable Equipment	Required Action
a. One offsite circuit	a.1 Perform Surveillance Requirement 4.8.1.1.1 for remaining offsite circuit within 1 hour prior to or after entering this condition, and at least once per 8 hours thereafter. AND a.2 Restore the inoperable offsite circuit to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

January 4, 2002

Inoperable Equipment	Required Action
<p>b. One diesel generator</p>	<p>b.1. Perform Surveillance Requirement 4.8.1.1.1 for the offsite circuits within 1 hour prior to or after entering this condition, and at least once per 8 hours thereafter.</p> <p>AND</p> <p>b.2 Demonstrate OPERABLE diesel generator is not inoperable due to common cause failure within 24 hours or perform Surveillance Requirement 4.8.1.1.2.a.2 for the OPERABLE diesel generator within 24 hours.</p> <p>AND</p> <p>b.3 Verify the steam-driven auxiliary feedwater pump is OPERABLE (MODES 1, 2, and 3 only). If this condition is not satisfied within 2 hours, be in a least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the following 6 hours.</p> <p>AND</p> <p>b.4 (Applicable only if the 14 day allowed outage time specified in Action Statement b.5 is to be used.) Verify the required Millstone Unit No. 3 diesel generator(s) is/are OPERABLE and the Millstone Unit No. 3 SBO diesel generator is available within 1 hour prior to or after entering this condition, and at least once per 24 hours thereafter. Restore any inoperable required Millstone Unit No. 3 diesel generator to OPERABLE status and/or Millstone Unit No. 3 SBO diesel generator to available status within 72 hours or be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.</p> <p>AND</p> <p>b.5 Restore the inoperable diesel generator to OPERABLE status within 72 hours (within 14 days if Action Statement b.4 is met) or be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.</p>

ACTION (Continued)

Inoperable Equipment	Required Action
<p>c. One offsite circuit</p> <p>AND</p> <p>One diesel generator</p>	<p>c.1 Perform Surveillance Requirement 4.8.1.1.1 for remaining offsite circuit within 1 hour and at least once per 8 hours thereafter.</p> <p>AND</p> <p>c.2 Demonstrate OPERABLE diesel generator is not inoperable due to common cause failure within 8 hours or perform Surveillance Requirement 4.8.1.1.2.a.2 for the OPERABLE diesel generator within 8 hours.</p> <p>AND</p> <p>c.3 Verify the steam-driven auxiliary feedwater pump is OPERABLE (MODES 1, 2, and 3 only). If this condition is not satisfied within 2 hours, be in at least HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the following 6 hours.</p> <p>AND</p> <p>c.4 Restore one inoperable A.C. source to OPERABLE status within 12 hours or be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.</p> <p>AND</p> <p>c.5 Restore remaining inoperable A.C. source to OPERABLE status following the time requirements of Action Statements a or b above based on the initial loss of the remaining inoperable A.C. source.</p>
<p>d. Two offsite circuits</p>	<p>d.1 Restore one of the inoperable offsite sources to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours.</p> <p>AND</p> <p>d.2 Following restoration of one offsite source restore remaining inoperable offsite source to OPERABLE status following the time requirements of Action Statement a above based on the initial loss of the remaining inoperable offsite source.</p>

ELECTRICAL POWER SYSTEMSACTION (Continued)

Inoperable Equipment	Required Action
e. Two diesel generators	<p>e.1 Perform Surveillance Requirement 4.8.1.1.1 for the offsite circuits within 1 hour and at least once per 8 hours thereafter.</p> <p>AND</p> <p>e.2 Restore one of the inoperable diesel generators to OPERABLE status within 2 hours or be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.</p> <p>AND</p> <p>e.3 Following restoration of one diesel generator restore remaining inoperable diesel generator to OPERABLE status following the time requirements of Action Statement b above based on the initial loss of the remaining inoperable diesel generator.</p>

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Verify correct breaker alignment and indicated power available for each required offsite circuit at least once per 24 hours.

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description	Initial					
	a	b*	c*			
1. Questions and answers are technically accurate and applicable to the facility.	Ro	N/A	✓			
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	Ro	N/A	✓			
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	Ro	N/A	✓			
4. If more than four RO and two SRO questions are repeated from the last two NRC licensing exams, the facility licensee's sampling process was random and systematic.	N/A	N/A	N/A			
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed <input type="checkbox"/> the audit exam was completed before the license exam was started <input type="checkbox"/> the examinations were developed independently <input type="checkbox"/> the licensee certifies that there is no duplication <input type="checkbox"/> other (explain)	Ro	N/A	✓			
6. Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank	Modified	New	Ro	N/A	✓
	25 / 7	12 / 5	38 / 13			
7. Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory	C/A		Ro	N/A	✓
	32 / 11	43 / 14				
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	Ro	N/A	✓			
9. Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.	Ro	N/A	✓			
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	Ro	N/A	✓			
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.	Ro	N/A	✓			
		Printed Name / Signature		Date		
a. Author	Peter Presby / <i>Peter Presby</i>		03/17/05			
b. Facility Reviewer (*)	N/A					
c. NRC Chief Examiner (#)	Joe D'Antonio / <i>Joe D'Antonio</i>		3/17/05			
d. NRC Regional Supervisor	Richard Conte / <i>Richard Conte</i>		3/17/05			
Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.						

NOTE: - Written Exam Quality Checklist covers entire written exam submitted to licensee in final format for administration.

Facility:		Date of Exam:		Exam Level: RO/SRO			
Item Description				Initial			
				a	b*	c*	
1.	Questions and answers are technically accurate and applicable to the facility.			R	N/A	R	
2.	a.	NRC K/As are referenced for all questions.		R	N/A	R	
	b.	Facility learning objectives are referenced as available.					
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401			R	N/A	R	
4.	If more than four RO and two SRO questions are repeated from the last two NRC licensing exams, the facility licensee's sampling process was random and systematic.					R	
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed <input type="checkbox"/> the audit exam was completed before the license exam was started <input type="checkbox"/> the examinations were developed independently <input type="checkbox"/> the licensee certifies that there is no duplication <input type="checkbox"/> other (explain)			R	N/A	R	
6.	Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank	Modified	New	R	N/A	R
		24 / 7	12 / 5	39 / 13			
7.	Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory		C/A	R	N/A	R
		31 / 10		44 / 15			
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.			R	N/A	R	
9.	Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.			R	N/A	R	
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.			R	N/A	R	
11.	The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.			R	N/A	R	
		Printed Name / Signature			Date		
a. Author	Peter Presby / <i>Peter Presby</i>			02/24/05			
b. Facility Reviewer (*)	N/A						
c. NRC Chief Examiner (#)	Joe D'Antonio / <i>Joe D'Antonio</i>			2/24/05			
d. NRC Regional Supervisor	Richard Conte / <i>Richard Conte</i>			2/24/05			
Note:	* The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.						

NOTE: - Written Exam Quality Checklist covers 100 Questions resubmitted for licensee review following resolution of validation week comments.

Facility:		Date of Exam:			Exam Level: RO/SRO		
Item Description					Initial		
					a	b*	c*
1.	Questions and answers are technically accurate and applicable to the facility.				R	N/A	✓
2.	a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.				R	N/A	✓
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401				R	N/A	✓
4.	N/A - 1 SRO / 1 RO If more than four RO and two SRO questions are repeated from the last two NRC licensing exams, the facility licensee's sampling process was random and systematic.						✓
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed <input type="checkbox"/> the audit exam was completed before the license exam was started <input type="checkbox"/> the examinations were developed independently <input type="checkbox"/> the licensee certifies that there is no duplication <input type="checkbox"/> other (explain)				R	N/A	✓
6.	Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank	Modified	New		N/A	✓
		25 / 7	12 / 5	38 / 13	R		
7.	Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory	C/A			N/A	✓
		31 / 10	44 / 15		R		
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.				R	N/A	✓
9.	Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.				R	N/A	✓
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.				R	N/A	✓
11.	The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.				R	N/A	✓
		Printed Name / Signature			Date		
a. Author	Peter Presby / <i>Peter Presby</i>			02/07/05			
b. Facility Reviewer (*)	N/A						
c. NRC Chief Examiner (#)	Joe D'Antonio / <i>Joe D'Antonio</i>			2/7/05			
d. NRC Regional Supervisor	Richard Conte / <i>Richard Conte</i>			2/7/05			
Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.							

NOTE: - Written Exam Quality Checklist covers 38 Questions (51-75, 88-100) for 1st time submittal and 62 questions resubmitted for licensee review following initial comment resolution

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description				Initial		
				a	b*	c*
1.	Questions and answers are technically accurate and applicable to the facility.			RO	Y	Y
2.	a.	NRC K/As are referenced for all questions.		RO	Y	Y
	b.	Facility learning objectives are referenced as available.				
3.	SRO questions are appropriate in accordance with Section D.2.d of ES-401			RO	Y	Y
4.	If more than four RO and two SRO questions are repeated from the last two NRC licensing exams, the facility licensee's sampling process was random and systematic.					N/A
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed <input type="checkbox"/> the audit exam was completed before the license exam was started <input checked="" type="checkbox"/> the examinations were developed independently <input type="checkbox"/> the licensee certifies that there is no duplication <input type="checkbox"/> other (explain)			RO	Y	Y
6.	Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank	Modified	New	Test Not Comp.	
		21 / 5	5 / 3	24 / 4		
7.	Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory	C/A		Test Not Comp.	
		20 / 5	30 / 7			
8.	References/handouts provided do not give away answers or aid in the elimination of distractors.	No handouts			RO	Y
9.	Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.				RO	Y
10.	Question psychometric quality and format meet the guidelines in ES Appendix B.				RO	Y
11.	The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.	Test not complete			RO	Y
		Printed Name / Signature			Date	
a. Author	Peter Presby / <i>Peter Presby</i>			01/12/05		
b. Facility Reviewer (*)	N/A					
c. NRC Chief Examiner (#)	Joe D'Antonio / <i>Joe D'Antonio</i>			1/15/05		
d. NRC Regional Supervisor	Richard Conte / <i>Richard Conte</i>			1/13/05		
Note:	* The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.					

NOTE: - Written Exam Quality Checklist covers 32 Questions (27-50, 80-87)

* - Items 6 & 7 include the first 30 Questions (1-26, 76-79)

Facility:		Date of Exam:			Exam Level: RO/SRO		
Item Description				Initial			
	a	b*	c*				
1. Questions and answers are technically accurate and applicable to the facility.	RO	J					
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	RO	J					
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	RO	J					
4. If more than four RO and two SRO questions are repeated from the last two NRC licensing exams, the facility licensee's sampling process was random and systematic.							
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed <input type="checkbox"/> the audit exam was completed before the license exam was started <input checked="" type="checkbox"/> the examinations were developed independently <input type="checkbox"/> the licensee certifies that there is no duplication <input type="checkbox"/> other (explain)	RO	J					
6. Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.	Bank	Modified	New	Test not complete			
	15'1	0'2	12'1	RO	J		
7. Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory	C/A		Test not complete			
	1	1		N/A	J		
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	No handouts			N/A	J		
9. Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.	RO	J					
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	RO	J					
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.	Test not complete			N/A	N/A		
Printed Name / Signature		Date					
a. Author	Peter Presby / <i>Peter Presby</i>			12/06/04			
b. Facility Reviewer (*)	N/A						
c. NRC Chief Examiner (#)	Joe D'Antonio / <i>Joe D'Antonio</i>			12/8/04			
d. NRC Regional Supervisor	Richard Conte / <i>Richard Conte</i>			12/10/04			
Note:	* The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.						

NOTE: Written Exam Quality Checklist covers 30 Questions (1-26, 76-79)