COVER SHEET

SEQUOYAH EXAM
50-327, 328/2000-301

AUGUST 7 - 21, 2000

-- ADMINISTRATIVE DOCUMENTS --
ALL IN ONE ADAMS DOCUMENT

[✓] ES-201-1 - Exam Preparation Checklist

[✓] ES-201-2 - Exam Outline Quality Checklist

[✓] ES-201-3 - Exam Security Agreements

[✓] ES-301-1 - Admin Topics Outline

[✓] ES-301-2 - Control Room Systems & Facility Walk-through Test Outline

[✓] ES-301-3 - Operating Test Quality Checklist

[✓] ES-301-4 - Simulator Scenario Quality Checklist

[✓] ES-301-5 - Transient & Event Checklist

[✓] ES-301-6 - Competencies Checklist

[✓] ES-401-3 Written Exam Outlines (SRO) ES-401-4 Written Exam Outlines (RO)

[✓] ES-401-7 - Written Exam Quality Checklist

[✓] ES-401-9 - Written Exam Review Worksheet

[✓] ES-403-1 - Written Exam Grading Quality Checklist

[✓] ES-501-1 - Post Exam Check Sheet

Facility: Sequoyah Nuclear Plant Date of Examination: August 7 - 11, 2000
August 14-17, 2000

Examinations Developed by: (Facility) / (NRC) (circle one)

Target Date*	Task Description / Reference	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a & b)	
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	
-120	3. Facility contact briefed on security & other requirements (C.2.c)	
-120	4. Corporate notification letter sent (C.2.d)	
[-90]	[5. Reference material due (C.1.e; C.3.c)]	
-75	6. Integrated examination outline(s) due (C.1.e & f; C.3.d)	
-70	7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)	N/A
-45	8. Proposed examinations, supporting documentation, and reference materials due (C.1.e, f, g & h; C.3.d)	
-30	9. Preliminary license applications due (C.1.l; C.2.g; ES-202)	
-14	10. Final license applications due and assignment sheet prepared (C.1.l; C.2.g; ES-202)	
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f & h; C.3.g)	
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	
-7	14. Final applications reviewed; assignment sheet updated; waiver letters sent (C.2.g, ES-204)	
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee and authorization granted to give written exams (if applicable) (C.3.k)	
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	

* Target dates are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee.

[ ] Applies only to examinations prepared by the NRC.

Facility: **Sequoyah** Date of Examination: **8/7 - 8/21/00**

Item	Task Description	Initials a	Initials b*	Initials c
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model per ES-401.	MEW	NA	
	b. Assess whether the outline was systematically prepared and whether all knowledge and ability categories are appropriately sampled.	MEW	NA	
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	MEW	NA	
	d. Assess whether the repetition from previous examination outlines is excessive.	MEW	NA	
2. SIM	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, and major transients.	fsm	NA	
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity; ensure each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s)*, and scenarios will not be repeated over successive days.	fsm	NA	
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	fsm	NA	
3. W/T	a. Verify that: (1) the outline(s) contain(s) the required number of control room and in-plant tasks, (2) no more than 30% of the test material is repeated from the last NRC examination, (3)* no tasks are duplicated from the applicants' audit test(s), and (4) no more than 80% of any operating test is taken directly from the licensee's exam banks.	fsm	NA	
	b. Verify that: (1) the tasks are distributed among the safety function groupings as specified in ES-301, (2) one task is conducted in a low-power or shutdown condition, (3) 40% of the tasks require the applicant to implement an alternate path procedure, (4) one in-plant task tests the applicant's response to an emergency or abnormal condition, and (5) the in-plant walk-through requires the applicant to enter the RCA.	fsm	NA	
	c. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	fsm	NA	
	d. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on successive days.	fsm	NA	
4. GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	fsm	NA	
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	fsm	NA	
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	fsm	NA	
	d. Check for duplication and overlap among exam sections.	fsm	NA	
	e. Check the entire exam for balance of coverage.	fsm	NA	
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	fsm	NA	

	Printed Name / Signature	Date
a. Author	MARK MILLER / 7/19/00 LARRY S. MELLEN /	7/7/00
b. Facility Reviewer(*)	N/A	N/A
c. Chief Examiner	D. CHARLES PAYNE /	7/29/00
d. NRC Supervisor	G.T. Hopper /	8/5/00

(*) Not applicable for NRC-developed examinations.

RO/SRO INITIAL EXAMINATION SECURITY AGREEMENT

Pre-examination

I acknowledge that I have acquired specialized knowledge about the NRC RO/SRO initial examination scheduled for the week(s) indicated in this agreement as of the date of my signature and agree that I will not knowingly divulge any information about this examination to any unauthorized persons. I understand that I am not to participate in any instruction involving those licensees scheduled to be administered these license examinations from this date until completion of examination administration. I further understand that violation of the conditions of this agreement may result in cancellation of the examination and/or disciplinary action against me and/or an enforcement action by the NRC against me or TVAN.

Post-examination

I did not, to the best of my knowledge, divulge any information concerning the examination(s) administered during the week(s) indicated to any unauthorized persons. I did not participate in instructing those licensees who were administered these examination(s) from the date that I entered into this security agreement until the completion of examination administration.

Examination Period: 8-7-00 to 8-21-00

Printed Name	Pre-examination Certification	Date	Post-examination Certification	Date
Lacy Pauley	Lacy Pauley	7/3/2000	Lacy Pauley	8/23/00
Phillip H. Gass	Phillip H. Gass	2/3/00	Phillip H. Gass	8/23/00
Gregory S. Potect	Gregory S. Potect	2/3/2000	Gregory S. Potect	8-22-00
Richard T. Darscoll	Richard T. Darscoll	2/3/2000	R T Darscoll	8-22-00
Jeffrey J. Reilly	[illegible]	5/9/00	[illegible]	8-23-00
William J. Ross	[illegible]	5/9/00		
V E Keyser	V E Keyser	5/31/00	V E Keyser	8-22-00
Thomas B Marsolek	[illegible]	5/31/00		
Daniel Johnson	Daniel Johnson	5/31/00		
Mike Bercher	Michael A. Bercher	7/12/00	Michael A. Bercher	8/23/00
Joseph D. Smithson	Joseph D. Smithson	7/12/00	Joseph D. Smithson	8/23/00
Michael C. Peterson	[illegible]	7/12/00	[illegible]	8/22/00
Thomas F. Lundy	Thomas F. Lundy	7/12/00	Thomas F. Lundy	8/22/00
James K. Wilkes	[illegible]	7/24/00	[illegible]	8/23/00
WALTER W. HUNT	[illegible]	8/7/00	[illegible]	8/22/00
James P Kearney	James P Kearney	8/8/00	James P Kearney	8/22/00

RO/SRO INITIAL EXAMINATION SECURITY AGREEMENT

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Examination Period: 8-7-00 to 8-21-00

Printed Name	Pre-examination Certification	Date	Post-examination Certification	Date
Lacy Pauley	Lacy Pauley	2/3/2000	Lacy Pauley	8/23/00
Phillip H. Gass	Phillip H. Gass	2/3/00	Phillip H. Gass	8/23/00
Gregory S. Pettit	Gregory S. Pettit	2/3/2000	Gregory S. Pettit	8-22-00
Richard F. Driscoll	Richard F. Driscoll	2/3/2000	R F Driscoll	8-22-00
Jeffrey J. Reilly	[illegible]	5/9/00	[illegible]	8-23-00
William J. Ross	[illegible]	5/9/00	[illegible]	9/6/00
V E Keyser	V E Keyser	5/31/00	V E Keyser	8-22-00
Thomas B Marotte	[illegible]	5/31/00	[illegible]	9/6/00
Daniel Johnson	Daniel Johnson	5/31/00	Daniel John	9-6-00
Mike Bercher	Michael A. Bercher	7/12/00	Michael A. Bercher	8/25/00
Joseph D. Smithson	Joseph D. Smithson	7/12/00	Joseph D. Smithson	8/23/00
Michael C. Peterson	[illegible]	7/12/00	[illegible]	8/22/00
Thomas F. Lundy	Thomas F. Lundy	7/12/00	Thomas F. Lundy	8/22/00
James K. Wilkes	[illegible]	7/24/00	[illegible]	8/23/00
Walter W. Hunt	Walter W. Hunt	8/7/00	[illegible]	8/22/00
James P Kearney	James P Kearney	8/8/00	James P Kearney	8/22/00

Facility: Sequoyah		Date of Examination: 8/14 - 17/00
Examination Level (circle one): **RO**		Operating Test Number: 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct Of Operations	JPM # NRC-2000-4 - Calculate Subcooling Margin (Neither SPDS nor Subcooling Margin Monitors are available.) **(Perform in MCR)**
		Q1 - Shutdown margin basis.
		Q2 - Mid-Loop or Reduced RCS inventory.
A.2	Equipment Control	Q1 - Equipment Configuration Control.
		Q2 - Minor differences between component labels nomenclature and the component description listed on a clearance.
A.3	Radiation Control	JPM # NRC-2000-5 - Perform a Shielding Calculation.
A.4	Emergency Plan	JPM # 43-1 - Perform Reactor Coolant System Water Inventory (0-SI-068-137.0). **(Perform in simulator)**

Facility: Sequoyah		Date of Examination: 8/7 - 8/11/00
Examination Level: **SRO** (Crews 1-3)		Operating Test Number: 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct Of Operations	JPM # NRC-2000-3 - Without SPDS available, determine SPDS status using a static simulator set.
		Q1 -10 CFR 19, Workers Rights
		Q2 - Departure from the facility license or technical specifications
A.2	Equipment Control	Q1 - Describe the method for verifying the position of locked valves, both initially and subsequently. (When they are first locked and when they are verified locked)
		Q2 - Equipment Configuration Control
A.3	Radiation Control	Q1 - Methods for identifying steam generator tube ruptures and leaks in E-3 and AOP-R.01.
		Q2 - Emergency Exposure Guidance
A.4	Emergency Plan	JPM # 120 - Classify a Loss of Shutdown Cooling event and perform REP actions.

Facility: Sequoyah		Date of Examination: 8/7 - 8/11/00
Examination Level: **SRO** (Crew 4)		Operating Test Number: 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct Of Operations	JPM # NRC-2000-3 - Without SPDS available, determine SPDS status using a static simulator set.
		Q1 -10 CFR 19, Workers Rights
		Q2 - Departure from the facility license or technical specifications
A.2	Equipment Control	Q1 - Describe the method for verifying the position of locked valves, both initially and subsequently. (When they are first locked and when they are verified locked)
		Q2 -Equipment Configuration Control
A.3	Radiation Control	Q1 - Methods for identifying steam generator tube ruptures and leaks in E-3 and AOP-R.01.
		Q2 - Emergency Exposure Guidance
A.4	Emergency Plan	Classify a Loss of Heat Sink event and perform REP actions.

Facility: Sequoyah
Date of Examination: 8/7 - 11/00
Exam Level: **SRO(U)**
Operating Test No.: 1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. Transfer to Hot-leg Recirculation, JPM # 13 KA 005K4.02 (3.2/3.5)	D,S	4
b. Pressurizer Level Control Malfunction, JPM # 12 KA 00011A1.01 (3.5/3.6)	D,S	2
c. Loss of Control Air (AOP-M.02), JPM # NRC-2000-2 KA 078A3.01 (3.1/3.2)	N,S,A,L	8

B.2 Facility Walk-Through

a. Control S/G PORVs From the Aux Control Room JPM # 66 AP KA 010A4.03 (4.0/3.8)	D,A,R	3
b. Local Alignment of 2-RM-90-112 to Lower Containment JPM # 72-2 KA 002A3.01 (3.7/3.9)	D, R	7

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: Sequoyah Date of Examination: 8/14 - 17/00
Exam Level (circle one): **RO and SRO(I)** Operating Test No.: 1

B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a.	Shutdown Bank Withdrawal, JPM # 38AP2 KA 001A2.08 (3.3/3.8)	D,A,L, S	1
b.	Align ECCS & CS Pumps to Cntmt Sump, JPM # 64AP KA 006000K4.09 (3.8/4.1)	D,A,L,,S	2
c.	Uncontrolled Depressurization of all S/Gs, JPM # NRC-2000-1 KA 006A1.06 (3.6/3.9)	N, S	3
d.	Respond to High Containment Pressure, JPM # 57AP KA 022000A3.01 (4.1/4.1)	D,A,L,C	5
e.	Emergency Mode Control Room Isol. due to High Rad, JPM # 153 KA 072K4.03 (3.2/3.6)	D,S	7
f.	Initiate Makeup to the Refueling Cavity, JPM # 104 KA 036AA2.02 (3.4/4.1)	D,S	8
g.	Faulted SG Isolation With MSIV Stuck Open, JPM # 58AP KA035A2.01 (4.5/4.6)	D,A,S	4A

B.2 Facility Walk-Through

a.	Local Alignment of U2 TDAFW LCV Backup Air Supply JPM # 134 KA 061000A2.02 (3.2/3.6)	D,R	4B
b.	Align Standby Air Receiver to the 2A-A D/G, JPM # 23 KA 064000K1.05 (3.4/3.9)	D	6
c.	Local Manual Control of a S/G PORV with Control Air, JPM # 32AP (NRC modified) KA 010A2.03 (4.1/4.2)	M, L	3

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Facility: **Sequoyah** Date of Examination: **8/7 - 8/17/00** Operating Test Number: **1**

	1. GENERAL CRITERIA	Initials a	Initials b	Initials c
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	fsm	NA	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	fsm	NA	
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	fsm	NA	
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	fsm	NA	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	fsm	NA	
	2. WALK-THROUGH (CATEGORY A & B) CRITERIA	--	--	--
a.	Each JPM includes the following, as applicable: · initial conditions · initiating cues · references and tools, including associated procedures · validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee · specific performance criteria that include: - detailed expected actions with exact criteria and nomenclature - system response and other examiner cues - statements describing important observations to be made by the applicant - criteria for successful completion of the task - identification of critical steps and their associated performance standards - restrictions on the sequence of steps, if applicable	fsm	NA	
b.	The prescripted questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	fsm	NA	
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.	fsm	NA	
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	fsm	NA	
	3. SIMULATOR (CATEGORY C) CRITERIA	--	--	--
a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.	fsm	NA	

	Printed Name / Signature	Date
a. Author	LARRY S. MELLEN / Larry S. Mellen	7/7/00
b. Facility Reviewer(*)	N/A	N/A
c. NRC Chief Examiner (*)	D. CHARLES PAYNE / D. Payne	8/2/00
d. NRC Supervisor (*)	G.T. HOPPER / G.T. Hopper	8/3/00

(*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.

Facility: **Sequoyah** Date of Exam: **8/7-17/00** Scenario Numbers: **1 / 2 / 3** Operating Test No.: **1**

QUALITATIVE ATTRIBUTES	Initials a	Initials b	Initials c
1. The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	fsm	NA	
2. The scenarios consist mostly of related events.	fsm	NA	
3. Each event description consists of · the point in the scenario when it is to be initiated · the malfunction(s) that are entered to initiate the event · the symptoms/cues that will be visible to the crew · the expected operator actions (by shift position) · the event termination point (if applicable)	fsm	NA	
4. No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.	fsm	NA	
5. The events are valid with regard to physics and thermodynamics.	fsm	NA	
6. Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	fsm	NA	
7. If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.	fsm	NA	
8. The simulator modeling is not altered.	fsm	NA	
9. The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	fsm	NA	
10. Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.	fsm	NA	
11. All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	fsm	NA	
12. Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).	fsm	NA	
13. The level of difficulty is appropriate to support licensing decisions for each crew position.	fsm	NA	

TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)	Actual Attributes	--	--	--
1. Total malfunctions (5-8)	8 / 7 / 10	fsm	NA	
2. Malfunctions after EOP entry (1-2)	3 / 2 / 3	fsm	NA	
3. Abnormal events (2-4)	4 / 4 / 4	fsm	NA	
4. Major transients (1-2)	1 / 1 / 2	fsm	NA	
5. EOPs entered/requiring substantive actions (1-2)	1 / 2 / 1	fsm	NA	
6. EOP contingencies requiring substantive actions (0-2)	1 / 1 / 1	fsm	NA	
7. Critical tasks (2-3)	5 / 5 / 3	fsm	NA	

OPERATING TEST NO.: **1 (Crew 1, pg. 1)**

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO-1	Reactivity	1	2	-		
	Normal	1	1	1		
	Instrument	2	3	6		
	Component	2	4	5		
	Major	1	7	7		
SRO-I As RO	Reactivity	1				
	Normal	0				
	Instrument	1				
	Component	1				
	Major	1				
SRO-I As SRO	Reactivity	0				
	Normal	1				
	Instrument	1				
	Component	1				
	Major	1				
SROU-1	Reactivity	0	-	-		
	Normal	1	1	1		
	Instrument	1	3,5	3,5		
	Component	1	4,6	4,6		
	Major	1	7	7		

Instructions:
(1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author: S Mell

Chief Examiner: R Payne

OPERATING TEST NO.: **1 (Crew 1, pg. 2)**

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO-2	Reactivity	1	-	2		
	Normal	1	2	-		
	Instrument	2	5	3		
	Component	2	6	4		
	Major	1	7	7		
SRO-I As RO	Reactivity	1				
	Normal	0				
	Instrument	1				
	Component	1				
	Major	1				
SRO-I As SRO	Reactivity	0				
	Normal	1				
	Instrument	1				
	Component	1				
	Major	1				
SRO-U	Reactivity	0				
	Normal	1				
	Instrument	1				
	Component	1				
	Major	1				

Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author: _____

Chief Examiner: _____

OPERATING TEST NO.: **1 (Crew 2)**

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO-3	Reactivity	1	-	2		
	Normal	1	2	-		
	Instrument	2	5	3		
	Component	2	6	4		
	Major	1	7	7		
SROI-1 As RO	Reactivity	1	2	-		
	Normal	0	1	-		
	Instrument	1	3	-		
	Component	1	4	-		
	Major	1	7	-		
SROI-1 As SRO	Reactivity	0	-	2		
	Normal	1	-	1		
	Instrument	1	-	3,5		
	Component	1	-	4,6		
	Major	1	-	7		
SROU-2	Reactivity	0	-	-		
	Normal	1	1	1		
	Instrument	1	3,5	6		
	Component	1	4,6	5		
	Major	1	7	7		

Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author: J S Melk

Chief Examiner: [illegible]

OPERATING TEST NO.: **1 (Crew 3)**

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO-5	Reactivity	1	-		1	
	Normal	1	2		2	
	Instrument	2	5		3	
	Component	2	6		5	
	Major	1	7		7,8	
SROI-3 As RO	Reactivity	1	2		-	
	Normal	0	1		-	
	Instrument	1	3		-	
	Component	1	4		-	
	Major	1	7		-	
SROI-3 As SRO	Reactivity	0	-		1	
	Normal	1	-		2	
	Instrument	1	-		3,6	
	Component	1	-		4,5	
	Major	1	-		7,8	
SROU-4	Reactivity	0	-		-	
	Normal	1	1		-	
	Instrument	1	3,5		6	
	Component	1	4,6		4	
	Major	1	7		7,8	

Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author: _____

Chief Examiner: _____

OPERATING TEST NO.: **1 (Crew 4)**

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO-4	Reactivity	1		-	1	
	Normal	1		1	2	
	Instrument	2		6	3	
	Component	2		5	5	
	Major	1		7	7,8	
SROI-2 As RO	Reactivity	1		2	-	
	Normal	0		-	-	
	Instrument	1		3	-	
	Component	1		4	-	
	Major	1		7	-	
SROI-2 As SRO	Reactivity	0		-	1	
	Normal	1		-	2	
	Instrument	1		-	3,6	
	Component	1		-	4,5	
	Major	1		-	7,8	
SROU-3	Reactivity	0		-	-	
	Normal	1		1	-	
	Instrument	1		3,5	6	
	Component	1		4,6	4	
	Major	1		7	7,8	

Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author: J-S. Mell

Chief Examiner: [illegible]

Crew 1
(SROU-1, RO-1, RO-2)

Competencies	Applicant #1 RO/SRO-I/SRO-U				Applicant #2 RO/SRO-I/SRO-U				Applicant #3 RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	1-7	2-7			1-4, 7	5-7			5-7	1-4, 7		
Diagnose Events and Conditions	3-7	3-7			3,4, 7	5,6, 7			5,6, 7	3,4, 7		
Understand Plant and System Response	2-7	2-7			2-4, 7	2, 5-7			2, 5-7	2-4, 7		
Comply With and Use Procedures (1)	2,3 5-7	2,3 5-7			1-4, 7	2, 5-7			2, 5-7	1-4, 7		
Operate Control Boards (2)	NA	NA			1-4, 7	2, 5-7			2, 5-7	1-4, 7		
Communicate and Interact With the Crew	1-7	1-7			1-7	1-7			1-7	1-7		
Demonstrate Supervisory Ability (3)	1-7	1-7			NA	NA			NA	NA		
Comply With and Use Tech. Specs. (3)	3	3-5			NA	NA			NA	NA		

Notes:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: S.S. Mell

Chief Examiner: R. Payne

Crew 2
(SROU-2, RO-3, SROI-1)

Competencies	Applicant #1 RO/SRO-I/SRO-U				Applicant #2 RO/SRO-I/SRO-U				Applicant #3 RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	1-7	2-7			5-7	1-4, 7			1-4, 7	2-7		
Diagnose Events and Conditions	3-7	3-7			5, 6, 7	3, 4, 7			3, 4, 7	3-7		
Understand Plant and System Response	2-7	2-7			2, 5-7	2-4, 7			2-4, 7	2-7		
Comply With and Use Procedures (1)	2, 3, 5-7	2, 3, 5-7			2, 5-7	1-4, 7			1-4, 7	2, 3, 5-7		
Operate Control Boards (2)	NA	2, 5-7			2, 5-7	1-4, 7			1-4, 7	NA		
Communicate and Interact With the Crew	1-7	1-7			1-7	1-7			1-7	1-7		
Demonstrate Supervisory Ability (3)	1-7	NA			NA	NA			NA	1-7		
Comply With and Use Tech. Specs. (3)	3	NA			NA	NA			NA	3-5		

Notes:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: J.S. Melh

Chief Examiner: R. Payne

Crew 3
(SROU-3, RO-4, SROI-2)

Competencies	Applicant #1 RO/SRO-I/SRO-U				Applicant #2 RO/SRO-I/SRO-U				Applicant #3 RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	1-7		4,6, 7,8		5-7		1-3, 5,7,8		1-4, 7		1-7	
Diagnose Events and Conditions	3-7		4,6 7,8		5-7		1-3, 5,8		3,4, 7		3-7	
Understand Plant and System Response	2-7		1,4, 6-8		2, 5-7		1,3. 5,7,8		2-4, 7		1, 3-8	
Comply With and Use Procedures (1)	2,3 5-7		1,4, 6-8		2, 5-7		1-3, 5,7,8		1-4, 7		1, 3-8	
Operate Control Boards (2)	NA		1,4, 6-8		2, 5-7		1-3, 5,7,8		1-4, 7		NA	
Communicate and Interact With the Crew	1-7		1-8		1-7		1-8		1-7		1-8	
Demonstrate Supervisory Ability (3)	1-7		NA		NA		NA		NA		1-8	
Comply With and Use Tech. Specs. (3)	3		NA		NA		NA		NA		4,5, 7	

Notes:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: P.S. Mull

Chief Examiner: R.B. Payne

Crew 4
(SROU-4, RO-5, SROI-3)

Competencies	Applicant #1 RO/SRO-I/SRO-U				Applicant #2 RO/SRO-I/SRO-U				Applicant #3 RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms		2-7	4-6, 7,8			5-7	1-3, 5,7,8			1-4, 7	1-7	
Diagnose Events and Conditions		3-7	4,6, 7,8			5,6, 7	1-3, 5,8			3,4, 7	3-7	
Understand Plant and System Response		2-7	1,4,6 7,8			2, 5-7	1,3, 5,7,8			2-4, 7	1, 3-8	
Comply With and Use Procedures (1)		2,3, 5-7	1,4,6 7,8			2, 5-7	1-3, 5,7,8			1-4, 7	1, 3-8	
Operate Control Boards (2)		NA	1,4,6, 7,8			2, 5-7	1-3, 5,7,8			1-4, 7	NA	
Communicate and Interact With the Crew		1-7	1-8			1-7	1-8			1-7	1-8	
Demonstrate Supervisory Ability (3)		1-7	NA			NA	NA			NA	1-8	
Comply With and Use Tech. Specs. (3)		3-5	NA			NA	NA			NA	4,5, 7	

Notes:

(1) Includes Technical Specification compliance for an RO.
(2) Optional for an SRO-U.
(3) Only applicable to SROs.

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: J.S. Mell

Chief Examiner: C Payne

Facility: Sequoyah Date of Exam: 8/14/2000 Exam Level: SRO

Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	3	6	3				4	6			2	24
	2	2	2	3				2	3			4	16
	3	1	0	1				1	0			0	3
	Tier Totals	6	8	7				7	9			6	43
2. Plant Systems	1	1	2	1	1	0	2	2	3	0	5	2	19
	2	1	0	2	3	2	0	0	3	2	1	3	17
	3	1	1	0	1	0	0	1	0	0	0	0	4
	Tier Totals	3	3	3	5	2	2	3	6	2	6	5	40

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	17
	5	4	3	5	

Note:
1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).
2. Actual point totals must match those specified in the table.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category/tier.
6.* The generic K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1					B		AA2.02	4.2	1
000003 Dropped Control Rod / 1					B		AA2.03	3.8	1
000005 Inoperable/Stuck Control Rod / 1		B					AK2.02	2.6	1
000011 Large Break LOCA / 3						S	2.1.7	4.4	1
W/E04 LOCA Outside Containment / 3						B	2.4.4	4.3	1
W/EO1 & E02 Rediagnosis & SI Termination / 3		B					E02/EK2.2	3.9	1
000015/17 RCP Malfunctions / 4					B		AA2.02	3.0	1
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4		B					E09/EK2.2	3.9	1
000024 Emergency Boration / 1					B		AA2.02	4.4	1
000026 Loss of Component Cooling Water / 8					B		AA2.01	3.5	1
000029 Anticipated Transient w/o Scram / 1	S						EK1.05	3.2	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4		B					AK2.02	2.6	1
CE/A11; W/E08 RCS Overcooling - PTS / 4				B			EA1.1	3.8	1
000051 Loss of Condenser Vacuum / 4			B				AK3.01	3.1	1
000055 Station Blackout / 6			B				EK3.02	4.6	1
000057 Loss of Vital AC Elec. Inst. Bus / 6			B				AK3.01	4.4	1
000059 Accidental Liquid RadWaste Rel. / 9	S						AK1.02	3.2	1
000062 Loss of Nuclear Service Water / 4				B			A1.05	3.1	1
000067 Plant Fire On-site / 9	B						AK1.01	3.9	1
000068 (BW/A06) Control Room Evac. / 8				S			AA1.14	4.4	1
000069 (W/E14) Loss of CTMT Integrity / 5		B					AK2.03	2.9	1
000074 (W/E06&E07) Inad. Core Cooling / 4		B		S			74/EK2.05 (4.1) & E06/EA1.1 (3.8)		2
~~BW/E03 Inadequate Subcooling Margin / 4~~									0
000076 High Reactor Coolant Activity / 9					B		AA2.02	3.4	1
~~BW/A02&A03 Loss of NNI-X/Y / 7~~									0
K/A Category Totals:	3	6	3	4	6	2	Group Point Total:		24

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1						B	2.4.6	4.0	1
~~BW/A01 Plant Runback / 1~~									0
~~BW/A04 Turbine Trip / 4~~									0
000008 Pressurizer Vapor Space Accident / 3					B		AA2.13	3.9	1
000009 Small Break LOCA / 3						B	2.4.16	4.0	1
BW/E08; W/E03 LOCA Cooldown - Depress. / 4			B				EK3.1	3.7	1
W/E11 Loss of Emergency Coolant Recirc. / 4				B			EA1.1	4.0	1
000022 Loss of Reactor Coolant Makeup / 2						B	2.1.20	4.2	1
000025 Loss of RHR System / 4	B						AK1.01	4.3	1
000027 Pressurizer Pressure Control System Malfunction / 3				B			AA1.01	3.9	1
000032 Loss of Source Range NI / 7	B						AK1.01	3.1	1
000033 Loss of Intermediate Range NI / 7									0
000037 Steam Generator Tube Leak / 3			B				AK3.03	3.3	1
000038 Steam Generator Tube Rupture / 3					B		EA2.13	3.7	1
000054 (CE/E06) Loss of Main Feedwater / 4									0
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4		B					EK2.1	3.9	1
000058 Loss of DC Power / 6					B		AA2.01	4.1	1
000060 Accidental Gaseous Radwaste Rel. / 9						S	2.3.1	3.0	1
000061 ARM System Alarms / 7		S					AK2.01	2.6	1
W/E16 High Containment Radiation / 9			B				EK3.3	3.0	1
000065 Loss of Instrument Air / 8									0
~~CE/E09 Functional Recovery~~									0
K/A Category Point Totals:	2	2	3	2	3	4	Group Point Total:		16

Emergency and Abnormal Plant Evolutions - Tier 1/Group 3

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2	B						AK1.01	3.1	1
000036 (BW/A08) Fuel Handling Accident / 8			B				AK3.02	3.6	1
000056 Loss of Off-site Power / 6				B			AA1.07	3.2	1
~~BW/E13&E14 EOP Rules and Enclosures~~									0
~~BW/A05 Emergency Diesel Actuation / 6~~									0
~~BW/A07 Flooding / 8~~									0
~~CE/A16 Excess RCS Leakage / 2~~									0
W/E13 Steam Generator Over-pressure / 4									0
W/E15 Containment Flooding / 5									0
K/A Category Point Totals:	1	0	1	1	0	0	Group Point Total:		3

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive						B						K6.03	4.2	1
003 Reactor Coolant Pump		B										K2.01	3.1	1
004 Chemical and Volume Control						B				B		K6.01 (3.3) & A4.04 (3.6)		2
013 Engineered Safety Features Actuation		B										K2.01	3.8	1
014 Rod Position Indication							B					A1.03	3.8	1
015 Nuclear Instrumentation			B									K3.03	3.4	1
017 In-core Temperature Monitor										B		A4.01	4.1	1
022 Containment Cooling											B	2.2.11	3.4	1
025 Ice Condenser	B											K1.01	2.7	1
026 Containment Spray				B								K4.05	3.3	1
056 Condensate											B	2.1.20	4.2	1
059 Main Feedwater										B		A4.01	3.1	1
061 Auxiliary/Emergency Feedwater							B	B				A1.01(4.2) A2.03 (3.4)		2
063 DC Electrical Distribution										B		A4.03	3.1	1
068 Liquid Radwaste								B				A2.04	3.3	1
071 Waste Gas Disposal								B				A2.05	2.6	1
072 Area Radiation Monitoring										B		A4.01	3.3	1
K/A Category Point Totals:	1	2	1	1	0	2	2	3	0	5	2	Group Point Total:		19

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant									B			A3.01	3.9	1
006 Emergency Core Cooling				B								K4.24	3.0	1
010 Pressurizer Pressure Control										B		A4.03	3.8	1
011 Pressurizer Level Control														0
012 Reactor Protection														0
016 Non-nuclear Instrumentation			B									K3.12	3.6	1
027 Containment Iodine Removal											S	2.3.10	3.3	1
028 Hydrogen Recombiner and Purge Control								S				A2.02	3.9	1
029 Containment Purge									B			A3.01	4.0	1
~~033 Spent Fuel Pool Cooling~~														0
034 Fuel Handling Equipment				B								K4.02	3.3	1
035 Steam Generator								B				A2.04	3.8	1
039 Main and Reheat Steam											B	2.1.16	2.8	1
055 Condenser Air Removal														0
062 AC Electrical Distribution											B	2.2.13	3.8	1
064 Emergency Diesel Generator			B									K3.02	4.4	1
073 Process Radiation Monitoring					B							K5.03	3.4	1
075 Circulating Water								B				A2.01	3.2	1
079 Station Air	B											K1.01	3.1	1
086 Fire Protection					B							K5.03	3.4	1
103 Containment				B								K4.06	3.7	1
K/A Category Point Totals:	1	0	2	3	2	0	0	3	2	1	3	Group Point Total:		17

PWR SRO Examination Outline
Plant Systems - Tier 2/Group 3

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
005 Residual Heat Removal														0
007 Pressurizer Relief/Quench Tank				B								K4.01	2.9	1
008 Component Cooling Water	B											K1.04	3.3	1
041 Steam Dump/Turbine Bypass Control														0
045 Main Turbine Generator														0
076 Service Water							B					A1.02	2.6	1
078 Instrument Air		B										K2.01	2.9	1
K/A Category Point Totals:	1	1	0	1	0	0	1	0	0	0	0	Group Point Total:		4

Plant-Specific Priorities

System / Topic	Recommended Replacement for...	Reason	Points
Plant-Specific Priority Total: (limit 10)			

Facility: Sequoyah Date of Exam: August 14, 2000 Exam Level: SRO

Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.4	Knowledge of shift staffing requirements. (SRO only)	3.4	1.0
	2.1.12	Knowledge of Technical Specifications for a system. (SRO only)	4.0	1.0
	2.1.19	Ability to use plant computer to obtain and evaluate parametric info on system and component data. (SRO only)	3.0	1.0
	2.1.22	Ability to determine mode of operation. (SRO only)	3.3	1.0
	2.1.34	Ability to maintain primary and secondary plant chemistry within allowable limits. (SRO only)	2.9	1.0
	2.1.			
	Total			5.0
Equipment Control	2.2.5	Knowledge of the process for making changes in the facility as described in the SAR. (SRO only)	2.7	1.0
	2.2.8	Knowledge of the process for determining if the proposed change, test or experiment involves an unreviewed safety question. (SRO only)	3.3	1.0
	2.2.23	Ability to track limiting conditions for operations. (SRO only)	3.8	1.0
	2.2.24	Ability to analyze the affect of maintenance activities on LCO status. (SRO only)	3.8	1.0
	2.2.			
	Total			4.0
Radiation Control	2.3.3	Knowledge of SRO responsibilities for aux. systems that are outside the MCR. (SRO only)	2.9	1.0
	2.3.4	Knowledge of radiation exposure limits and contam. control, including permissible levels above those authorized. (SRO only)	3.1	1.0
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard agains personal exposure. (SRO only)	3.3	1. 0
	2.3.			
	2.3.			
	Total			3.0
Emergency Procedures/ Plan	2.4.7	Knowledge of event based EOP mitigation strategies. (SRO only)	3.8	1.0
	2.4.22	Knowledge of the basis for prioritizing safety functions during abnormal/emergency operations. (SRO only)	4.0	1.0
	2.4.34	Knowledge of RO tasks performed outside the main control during emergency operations including system geography. (SRO only)	3.6	1.0
	2.4.41	Knowledge of emergency action level thresholds and classifications.	4.1	1.0
	2.4.47	Ability to diagnose and recognize trends in an accurate and timely manner utilizing appropriate control room material. (Both)	3.7	1.0
	2.4.			
	Total			5.0
Tier 3 Point Total (SRO)				**17**

Facility: Sequoyah Date of Exam: 8/14/2000 Exam Level: RO

Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	1	5	3				3	4			0	16
	2	2	2	3				1	5			4	17
	3	1	0	1				1	0			0	3
	Tier Totals	4	7	7				5	9			4	36
2. Plant Systems	1	3	2	1	1	0	2	2	4	2	4	2	23
	2	1	0	3	4	2	0	1	3	2	2	2	20
	3	1	1	1	3	0	0	1	0	1	0	0	8
	Tier Totals	5	3	5	8	2	2	4	7	5	6	4	51

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	13
	3	3	3	4	

Note:
1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).
2. Actual point totals must match those specified in the table.
3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category/tier.
6.* The generic K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000005 Inoperable/Stuck Control Rod / 1		B					AK2.02	2.5	1
000015/17 RCP Malfunctions / 4					B		AK2.02	2.8	1
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4		B					E09/EK2.2	3.6	1
000024 Emergency Boration / 1					B		AA2.02	3.9	1
000026 Loss of Component Cooling Water / 8					B		AA2.01	3.5	1
000027 Pressurizer Pressure Control System Malfunction / 3				B			AA1.01	4.0	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4		B					AK2.02	2.6	1
CE/A11; W/E08 RCS Overcooling - PTS / 4				B			EA1.1	3.8	1
000051 Loss of Condenser Vacuum / 4			B				AK3.01	2.8	1
000055 Station Blackout / 6			B				EK3.02	4.3	1
000057 Loss of Vital AC Elec. Inst. Bus / 6			B				AK3.01	4.1	1
000062 Loss of Nuclear Service Water / 4				B			AA1.05	3.1	1
000067 Plant Fire On-site / 9	B						AK1.01	2.9	1
~~000068 (BW/A06) Control Room Evac. / 8~~									0
000069 (W/E14) Loss of CTMT Integrity / 5		B					AK2.03	2.8	1
000074 (W/E06&E07) Inad. Core Cooling / 4		B					EK2.05	3.9	1
~~BW/E03 Inadequate Subcooling Margin / 4~~									0
000076 High Reactor Coolant Activity / 9					B		AA2.02	2.8	1
~~BW/A02&A03 Loss of NNI-X/Y / 7~~									0
K/A Category Totals:	1	5	3	3	4	0	Group Point Total:		16

Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1					B		AA2.02	4.2	1
000003 Dropped Control Rod / 1					B		AA2.03	3.6	1
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1						B	2.4.6	3.1	1
~~BW/A01 Plant Runback / 1~~									0
~~BW/A04 Turbine Trip / 4~~									0
000008 Pressurizer Vapor Space Accident / 3					B		AA2.13	3.8	1
000009 Small Break LOCA / 3						B	2.4.16	3.0	1
000011 Large Break LOCA / 3									0
W/E04 LOCA Outside Containment / 3						B	2.4.4	4.0	1
BW/E08; W/E03 LOCA Cooldown/Depress. / 4			B				EK3.1	3.3	1
W/E11 Loss of Emergency Coolant Recirc. / 4				B			EA1.1	3.9	1
W/EO1 & E02 Rediagnosis & SI Termination / 3		B					EO2/EK2.2	3.5	1
000022 Loss of Reactor Coolant Makeup / 2						B	2.1.20	4.3	1
000025 Loss of RHR System / 4	B						AK1.01	3.9	1
000029 Anticipated Transient w/o Scram / 1									0
000032 Loss of Source Range NI / 7	B						AK1.01	2.5	1
000033 Loss of Intermediate Range NI / 7									0
000037 Steam Generator Tube Leak / 3			B				AK3.03	3.1	1
000038 Steam Generator Tube Rupture / 3					B		EA2.13	3.7	1
000054 (CE/E06) Loss of Main Feedwater / 4									0
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4		B					EK2.1	3.7	1
000058 Loss of DC Power / 6					B		AA2.01	3.7	1
000059 Accidental Liquid RadWaste Rel. / 9									0
000060 Accidental Gaseous Radwaste Rel. / 9									0
000061 ARM System Alarms / 7									0
W/E16 High Containment Radiation / 9			B				EK3.3	3.0	1
~~CE/E09 Functional Recovery~~									0
K/A Category Point Totals:	2	2	3	1	5	4	Group Point Total:		17

Emergency and Abnormal Plant Evolutions - Tier 1/Group 3

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2	B						AK1.01	2.8	1
000036 (BW/A08) Fuel Handling Accident / 8			B				AK3.02	2.9	1
000056 Loss of Off-site Power / 6				B			AA1.07	3.2	1
000065 Loss of Instrument Air / 8									0
~~BW/E13&E14 EOP Rules and Enclosures~~									0
~~BW/A05 Emergency Diesel Actuation / 6~~									0
~~BW/A07 Flooding / 8~~									0
~~CE/A16 Excess RCS Leakage / 2~~									0
W/E13 Steam Generator Over-pressure / 4									0
W/E15 Containment Flooding / 5									0
K/A Category Point Totals:	1	0	1	1	0	0	Group Point Total:		3

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive						B			R			K6.03 (3.7) & A3.01 (4.1)		2
003 Reactor Coolant Pump		B		R								K2.01 (3.1) & K4.04 (2.8)		2
004 Chemical and Volume Control						B				B		K6.01 (3.1) & A4.04 (3.6)		2
013 Engineered Safety Features Actuation		B										K2.01	3.6	1
015 Nuclear Instrumentation			B									K3.03	4.3	1
017 In-core Temperature Monitor										B		A4.01	3.8	1
022 Containment Cooling	R										B	K1.01 (3.5) & 2.2.11 (2.5)		2
025 Ice Condenser	B								R			K1.01 (2.7) & A3.01 (3.0)		2
056 Condensate								R			B	A2.04 (2.6) & 2.1.20 (4.3)		2
059 Main Feedwater	R									B		K1.04 (3.4) & A4.01 (3.1)		2
061 Auxiliary/Emergency Feedwater							B	B				A1.01 (3.9) & A2.03 (3.1)		2
068 Liquid Radwaste								B				A2.04	3.3	1
071 Waste Gas Disposal								B				A2.05	2.5	1
072 Area Radiation Monitoring							R			B		A1.01 (3.4) & A4.01 (3.0)		2
K/A Category Point Totals:	3	2	1	1	0	2	2	4	2	4	2	Group Point Total:		23

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant									B			A3.01	3.7	1
006 Emergency Core Cooling				B								K4.24	2.6	1
010 Pressurizer Pressure Control										B		A4.03	4.0	1
011 Pressurizer Level Control								R				A2.11	3.4	1
012 Reactor Protection				R								K4.09	2.8	1
014 Rod Position Indication							B					A1.03	3.6	1
016 Non-nuclear Instrumentation			B									K3.12	3.4	1
026 Containment Spray				B								K4.05	2.8	1
029 Containment Purge									B			A3.01	3.8	1
033 Spent Fuel Pool Cooling				R								K4.05	3.1	1
035 Steam Generator								B				A2.04	3.6	1
039 Main and Reheat Steam											B	2.1.16	2.9	1
055 Condenser Air Removal			R									K3.01	2.5	1
062 AC Electrical Distribution											B	2.2.13	3.6	1
063 DC Electrical Distribution										B		A4.03	4.0	1
064 Emergency Diesel Generator			B									K3.02	4.2	1
073 Process Radiation Monitoring					B							K5.03	2.9	1
075 Circulating Water								B				A2.01	3.0	1
079 Station Air	B											K1.01	3.0	1
086 Fire Protection					B							K5.03	3.1	1
K/A Category Point Totals:	1	0	3	4	2	0	1	3	2	2	2	Group Point Total:		20

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
~~005 Residual Heat Removal~~														0
007 Pressurizer Relief/Quench Tank				B								K4.01	2.6	1
008 Component Cooling Water	B											K1.04	3.3	1
~~027 Containment Iodine Removal~~														0
~~028 Hydrogen Recombiner and Purge Control~~														0
034 Fuel Handling Equipment				B								K.4.02	2.5	1
041 Steam Dump/Turbine Bypass Control			R									K3.01	3.2	1
045 Main Turbine Generator									R			A3.04	3.4	1
076 Service Water							B					A1.02	2.6	1
078 Instrument Air		B										K2.01	2.7	1
103 Containment				B								K4.06	3.1	1
K/A Category Point Totals:	1	1	1	3	0	0	1	0	1	0	0	Group Point Total:		8

Plant-Specific Priorities

System / Topic	Recommended Replacement for...	Reason	Points
Plant-Specific Priority Total: (limit 10)			

Facility: Sequoyah Date of Exam: August 14, 2000 Exam Level: RO

Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.1	Knowledge of conduct of ops reqmts. (RO only)	3.7	1.0
	2.1.25	Ability to obtain and interpret station ref. materials... (RO only)	2.8	1.0
	2.1.32	Ability to explain and apply sys. limits and precautions. (RO only)	3.4	1.0
	2.1.			
	2.1.			
	Total			3.0
Equipment Control	2.2.3	Knowledge of design, procedural, and operational differences between units. (RO only)	3.1	1.0
	2.2.11	Knowledge of process for controlling temp. changes. (RO only)	2.5	1.0
	2.2.13	Knowledge of tagging and clearance procedures. (RO only)	3.6	1.0
	2.2.			
	2.2.			
	Total			3.0
Radiation Control	2.3.1	Knowledge of 10CFR20 and related facility radiation control reqm'ts. (RO only)	2.6	1.0
	2.3.2	Knowledge of facility ALARA program. (RO only)	2.5	1.0
	2.3.9	Knowledge of process for performing a cont'mt purge. (RO only)	2.5	1.0
	2.3.			
	2.3.			
	Total			3.0
Emergency Procedures/ Plan	2.4.2	Knowledge of system setpoints, interlocks and auto. actions assoc. with EOP entry conditions. (RO only)	3.9	1.0
	2.4.17	Knowledge of EOP terms and definitions. (RO only)	3.1	1.0
	2.4.32	Knowledge of oper. response to loss of all annunciators.(RO only)	3.3	1.0
	2.4.47	Ability to diagnose and recognize trends in an accurate and timely manner utilizing appropriate control room material. (Both)	3.4	1.0
	2.4.			
	2.4.			
	Total			4.0
Tier 3 Point Total (RO)				**13**

Facility: TVA SQN | Date of Exam: 8/7/2000 | Exam Level: RO/SRO

	Item Description				Initial a	Initial b*	Initial c#
1.	Questions and answers technically accurate and applicable to facility				✓	✓	✓
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available				✓	✓	✓
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401				✓	✓	✓
4.	No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	NRC: 6	Other:		✓	✓	✓
5.	[No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]				✓	✓	✓
6.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank: 44	Modified: 23	New: 33	✓	✓	✓
7.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory: 47	C/A: 53		✓	✓	✓
8.	References/handouts provided do not give away answers				✓	✓	✓
9.	Question distribution meets previously approved examination outline; deviations are justified				✓	✓	✓
10.	Question psychometric quality and format meet ES, Appendix B, guidelines				✓	✓	✓
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet				✓	✓	✓

	Printed Name / Signature	Date
a. Author	Gregory S. Pirtle / Gregory S. Pirtle	6/19/00
b. Facility Reviewer(*)	RICHARD F. DENSON / Richard F. Denson Jr	6/15/00
c. NRC Chief Examiner(*)	D. CHARLES PAYNE / D. Charles Payne	7/31/00
d. NRC Regional Supervisor(*)	G. T. Hopper / G. T. Hopper	8/4/00

Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.
See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.
[] The items in brackets do not apply to NRC-prepared examinations.

Facility: TVA SQN Date of Exam: 6/7/00 Exam Level: RO/SRO

	Item Description				Initial a	Initial b*	Initial c#
1.	Questions and answers technically accurate and applicable to facility						
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available						
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401						
4.	No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	NRC: 5	Other:				
5.	[No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]						
6.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank: 43	Modified: 20	New: 37			
7.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory: 48	C/A: 52				
8.	References/handouts provided do not give away answers						
9.	Question distribution meets previously approved examination outline; deviations are justified						
10.	Question psychometric quality and format meet ES, Appendix B, guidelines						
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet						

	Printed Name / Signature	Date
a. Author	Gregory S. Poteet / Gregory S. Poteet	6/9/00
b. Facility Reviewer(*)	RICHARD F. DASCOLI / Richard F. Dascoli	6/19/00
c. NRC Chief Examiner(*)	D. CHARLES PAYNE / D. Payne	7/31/00
d. NRC Regional Supervisor(*)	G. T. HOPPER / G. T. Hopper	8/1/00

Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.
See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.
[ ] The items in brackets do not apply to NRC-prepared examinations.

✓ = ok
O = NOT SOLO
O = DCP IS THE BOSS

Sequoyah Review Worksheet

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws: Stem Focus	Cues	T/F	Cred. Dist.	Partial	4. Job Content Flaws: Job-Link	Minutia	#/ units	Back-ward	5. U/E/S	6. Explanation	
1	H	3										✓ S	Stem grammar	B
2	H	3				X						✓ U*	Need another "not lit" distractor, B & D delete "due to..."	N
3	H	3										S		B
4	M	2										S		B
5	H	3										✓ ~~S~~U	In stem: Change parameter to parameters Is M4 near N41? see Q.	N
6	H	2				X	B. Control rods drive in					✓ S*	On choice all Delete all except "~~Reactor trips~~ beginning". Eliminates teaching "due to..."	N Plausible?
7	H	2				X						✓ S*	Choice "b" is NOT a plant response. Modify question stem to solicit correctly Plt response to what? Setpts.	B
8	H	3										✓ S	References too limited	N
9	M	2										✓ S*	This is a memory level question Grammar 1st bullet	B
10	M	2				X						✓ ~~S~~U	C & D not plausible. 3 gps & / Back	N

Instructions

[Refer to Appendix B for additional information regarding each of the following concepts.]

1. Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.

2. Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).

3. Check the appropriate box if a psychometric flaw is identified:
   - The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
   - The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).
   - The answer choices are a collection of unrelated true/false statements.
   - More than one distractor is not credible.
   - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).

4. Check the appropriate box if a job content error is identified:
   - The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).
   - The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).
   - The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).
   - The question requires reverse logic or application compared to the job requirements.

5. Based on the reviewer's judgment, is the question as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?

6. For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.

Q#	1. LOK (M/H)	2. LOD (1-5)	3. Psychometric Flaws: Stem Focus	Cues	T/F	Cred. Dist.	Partial	4. Job Content Flaws: Job-Link	Minutia	#/units	Back-ward	5. U/E/S	6. Explanation	
11	M	1				X						U	Question has no discriminatory value	M
12	H	2				X						E	Distractor "d" potentially correct. CAF Teaching in stem & 'A'	B
13	M	2										E	Delete (s) in stem. 2nd half of choices all same.	N
14	H	2						Re-order bullets				S*	Clean the stem bullets up as suggested. Facility LOK incorrect Explain last bullet	B
15	H	3										E	Make distractors symmetric.	M
16	M	3				X	Delete SBLOCA from stem. Δ order					E	B-RCPs C-Δ. Too similar to B	B
17	~~H~~ M	3										S*	~~This question should be "E" not "M"~~ Typo in distractor analysis. Distractor symmetry	B
18	H	2					Add IC Cont. sump lvl 8%					S	Mixed up wording	97NRC
19	H	3										S	Good "H" type question	N
20	H	3										E	Edit. B typo C-Δ to Separation μ is provided	N
21	M	2										E	Delete space in choice B. Order B⇄D	N
22	M	3										S		B
23	M	2						Δ order				S	Why trip Rx in B? But not C?	98NRC
24	H	2						Δ order				E	Insert the word "are" after ranges in the third bullet. Use abbrev consistently	B See notes.
25	H	3										E	A typo in distractor analysis "B" ~~Change C. Only distractor~~	B
26	M	3										S*	This is a memory not an "H" level question Change C	B
27	H	3				X	Delete use of ref.					S*	How were the distractors derived? Use only 1 decimal place	N
28	H	2										S		N
29	H	3										S		97NRC
30	H	3										S		N
31	M	2										S		B
32	M	2										E	Typos in distractor analysis.	B
33	H	2										S		

Q#	1. LOK (M/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		
34	H	3										S	Typo in distractor analysis
35	M	2										S	
36	M	2										S*	Question is not very discriminatory. consider new KA
37.	M	2										S	
38	H	2				X						S*	Distractor "a" is not plausible. Better to state "the H is burned by ....
39	H	4										S	
40	H/M	2/3										S*	This is borderline "H". The question relies more on system knowledge. This is more of an M 3.
41	H	2				X						S*	Distractor "b" is a true statement.
42	H	3										S	
43	H	2										E	Typo in distractor analysis.
44	H	2										S	
45	H	3										S	
46	M	2										S	
47	H	2										E	Typos in stem
48	H	4										S	*GOOD INTEGRATED QUESTION*
49	M	2										S	
50	H	3				X						S	Distractor "d" not plausible
51	H	3										S	
52	M	2										S	
53	M	2										S	
54	M	2				X						U	Distractors are not plausible. Suggest integrating question.
55	H	3										S	
56	M	2										S	
57	H	2										S*	Typo in choices "c" and "d"
58	M	2										S	
59	H	3										S	

Q#	1. LOK (M/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		
60	M	3										S	
61	H	2				X						U?	Question: Are there any RB to 80%???? If not then "a" and "d" are not plausible
62	M	2										S*	This is a memory level question
63	H	3	X									S*	The last 2 bullets are not clear.
64	M	2										S	
65	H	3										S	
66	H	3				X						U	Distractors "c" and "d" were eliminated due to the way they were written. See comment on question. → comp Q. new
67	M	3				X						S*	The "ORs" are misleading. Either drop them or ad the rest of them.
68	M	3										S*	This is a "M" question not an "H".
69	H	4										S	
70	M	2	X									E	new fix Typo in second bullet of stem.
71	H	3										S	
72	M	2										E	Typo in second bullet ("in in" should be "is in")
73	M	1				X						U	Choice "c" was the only one that made sense
74	M	2										S	
75	H	2										S	
76	H	2										S	
77	H	2										S	
78	M	2				X						E	new fix Choices "c" and "d" are misleading because "Verify" is NOT an action.
79	H	2										S	
80	H	3										S	
81	H	2										S	
82	H	3	X									E	Second 2 bullets not clear.
83	H	2										S*	Given initial conditions, is there any truth to distractor "d"?
84	H	2										S	
85	H	2										S	

Q#	1. LOK (M/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		
86	M	2										S	
87	H	1				X						U	Common knowledge. No discriminatory value. Distract cannot Based on validation
88	M	2										S	
89	H	3										S*	Will TS be supplied?
90	M	2										S	
91	M	2	X									E	Move the highlighted area to the stem.
92	H	3										S	
93	M	2										S*	Distractor "d" has no discriminatory value. "M"level not "H"
94	M	3										S	
95	M	2										S	
96	M	2										S	Rewrite Conclusion Acceptable
97	M	1				X						U	Distractor "d" in not plausible. Distractor "c" is not practical since Q asked for "minimum"
98	H	3	X			X						S*	Distractor "b" is not plausible, no torque was applied. Choice "d" is a bit misleading in that action plan does not rhyme with all required testing.
99	H	3										S*	Typos in the stem and distractor analysis.
100	M	2	X									E	Move first part of each choice to Stem.
101	M	2										S	
102	H	3										S	
103	M	2										S	
104	H	4										S	
105	M	2										S	
106	M	2										S	
107	M	1				X						U	Replace Q or make it a calculation. Q has no discriminatory value. 100 cpm above BG beta-gamma is a utility standard.
108	M	3										S	
109	M	2										S*	Distractor "d" is weak.
110	M	1				X						U	Distractors "b" and "d" are not plausible.

Q#	1. LOK (M/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5.	6.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	U/E/S	Explanation
111	M	2				X						S*	Distractor "a" is not plausible since not related to RCPs.
112	H	3										S	
113	M	2				X						S*	Distractor "c" is not plausible since question ask duties in the ACR.
114	H	3	X									S*	At the time of the incident, core alts were in progress. Does that effect the answer? Looks like maybe an NUE!!
15	H	3										S	
116	M	2										S	
117	M	3										S	
118	M	2										S	
119	M	2					X					E	Insert the word "the" to choices "a" and "b".
120	M	3										S	
121	M	2	X									E	Typo in the stem. Change "are" to "is".
122	H	3				X						E	Distractor "d" may not be totally incorrect.. Suggest putting "per procedure ___" after the word "correctly" in the stem.
123	M	3										S	
124	M	3										S	
125	M	2				X						S*	Re-evaluate "verify" as an action

Tally:
61 **M**s
64 **H**s
10 **U**s
16 **E**s
68 No Comment
15 S* No bold - suggestion only
12 **S*** Bold - requires modification
2 Questions identified as exceptional

General Comments:

Distractor analysis did not contain many plausibility statements (i.e. this distractor is plausible because....).

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		
04													
12							X						Distractor C - As temperature goes down, pressure goes down. While not the best choice, this answer is also correct. Leave as is. Not basis for stopping C/O.
17													
20													Remove "trip the reactor" from distractors A and B and change D to read "are unaffected" OK, will make Δ's.
24													
38													
39			X				X						The stem should be reworded to make it clear that all three parts for each answer must be correct for the answer to be correct. Will work on wording.
67													Tetraborate is a single word - Distractor D is not structured like the other distractors. The answer according to the attached reference is to ensure elemental Iodine is removed from the containment atmosphere. Will work on wording.
68													FR Z.1 Procedural Problem. On step 12 and 13 a hydrogen concentration of exactly 6% does not work in the procedure. There are no procedural guidelines for this concentration. Δ to less than 6%.
84													

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		

Instructions

[Refer to Appendix B for additional information regarding each of the following concepts.]

1. Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.

2. Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).

3. Check the appropriate box if a psychometric flaw is identified:
   - The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
   - The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).
   - The answer choices are a collection of unrelated true/false statements.
   - More than one distractor is not credible.
   - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).

4. Check the appropriate box if a job content error is identified:
   - The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).
   - The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).
   - The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).
   - The question requires reverse logic or application compared to the job requirements.

5. Based on the reviewer's judgment, is the question as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?

6. For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward		
85													
86													
87													
88													
89													
90			X				X						The stem should be reworded to make it clear that all three parts for each answer must be correct for the answer to be correct. In other words all three parts must be USQs
91													Is Cheater the official name of a mechanical assist device? Will add correct wording.
92													
93													
94													
95													
96													B is correct as written. There is a pink post-it that states otherwise. It should be disregarded. The reason for the reduction in temperature is to prevent the lifting of the atmospheric steam relief valves. Yes, 'B' is correct answer.
97													
98													Answer D - Are these all of the switches on these two panels? The answer states that it is, but none of the reference support this. Yes.
99													

Will work on wording.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		
2			X										The Term "sustained" in the stem does not appear to be appropriate Deleted word
3						X							Distractor C "To prevent pressurized thermal shock, by ensure all S/Gs are wet, prior to establishing feed." will work on wording.
4								X					Is an operator required to know the 12,000 MWD/Ton setpoint? Yes.
11						X							Distractor C " Enter E-0, then trip the reactor and complete the immediate action of E-0, then continue in both AOP-P.3 and E-0" will work on wording.
12						X							Distractor B does not appear plausible, there are no tripped chillers that will end up with a temperature decrease. Δ to "Immed. contain. press. ↑"
14			X										Step should read "Primary Containment Integrity" not "Containment Integrity" to be consistent with TS wording. OK added word.
15									X				Remove (SAMGs) from distractor A leave as is, because in transition.
16			X			X							Stem should read dose equivalent I-131 not dose equivalent iodine. Propose replacing all distractors with the attached. Will review.
19							X						C Potential correct answer - RED Paths change. I am not sure that a review to determine if a higher priority exists is incorrect. Agree. Already re-wording
21			X					X					Stem should read "all RCPs" and this may be an SRO level question Added word all. No, expect RO's to know this

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward		

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5. Based on the reviewer's judgment, is the question as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?

6. For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		
22						X							Distractor C is not a procedure method to mitigate the condition Will work on wording.
27													Similar to a JPM Question. Deleted part from Admin Test
33													Answer A is not correct as written. It should read "VERIFY containment ventilation isolation" OK will Δ wording.
35													"Gear operated" in Stem should be lower case OK will Δ to lower case
39							X						Distractor B is actually correct. When a reactor trips, the control rods insert. Maybe "turbine runs back to 18%" or "tubine stop valves close and steam dumps open" Already Δ'd to rods stepping in
40							X						Distractor "C" will occur. Rapidly is very subjective. Leave as-is.
44			X				X						Does the stem need to contain "No boron changes are in progress" to ensure distractor D is not a correct answer? Already a refuel boron conc. ⇒ wouldn't be borating
52			X				X						The stem is not clear enought to indicate that both parts of each answer MUST cause the transient. The way it is written distractors A and D could be correct Will work on wording
54													Spell out LCV in stem or at least remove the parentheses. In distractor B it should read 33 % Narrow Range. Will make Δ's
57													Either remove "at local panel 0-L-2" from distractors A and C and set it off with commas in distractor D or add it to distractor C following - set to zero. Will set off w/commas
62													Remove the 's' from opens and closes in distractors C and D OK will Δ wording
72			X										Add - Assume no operator action to stem Will add
73			X										Correct answer does not connect to the stem. Should begin with something about a clearance or the reference to clearance should be removed from stem. Will work on wording.
78													Distractor A, B, & C are all incorrect for the same reason Will replace 2 distractors.
79			X										From the stem, it may be possible to assume the components were submerged. If this is the case there are no correct answers. There are no limitorque MOVs in the turbine building that are qualified for submergence. Also the valves are limitorque not limit torque. Will add words in stem to say spray. Will correct spelling.
83													Distractor C is a subset of B. If B is correct then C must be correct. Replace distractor C. Not enough information was available to write another distractor

Added word "only" to 'C'

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward		
86							X						Does the inclusion of the phrase "at any time" make the answer incorrect? See step 7 of AOP P.01. There are D/G load restrictions that are in effect when this step is implemented. No load restrictions in this scenario. Added prior to restoration of off site pwr to stem.
100							X						This question makes the assumption the operator is not in E-3, however, the operator could reach the step in E-3 before beginning to take the steps associated with the TS action. That would make this answer correct and answer A potentially incorrect.
													Leave as-is. Plant is operating, not in the EOPs.

Facility: TVA - Sequoyah Date of Exam: 8-21-00 Exam Level: RO/SRO

	Item Description	Initials a	Initials b	Initials c
1.	Answer key changes and question deletions justified and documented	SP	MY	BLH
2.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	SP	MY	BLH
3.	Grading for all borderline cases (80% +/- 2%) reviewed in detail	SP	MY	BLH
4.	All other failing examinations checked to ensure that grades are justified	SP	MY	BLH
5.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	SP	MY	BLH

	Printed Name / Signature	Date
a. Grader	Gregory S. Poteet / Gregory S. Poteet	8-22-00
b. Facility Reviewer(*)	RICHARD F. DESCOTE / Richard F. Descote	8-24-00
c. NRC Chief Examiner (*)	Bobby L. Hallmark / [illegible]	9/8/00 / 9/8/00
d. NRC Supervisor (*)	MICHAEL E. ERNSTES / Michael E. Ernstes	9/11/00

(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.

Facility: TVA - Sequoyah Date of Exam: 8-21-00 Exam Level: RO/SRO

Item Description	Initials a	Initials b	Initials c
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	Printed Name / Signature	Date
a. Grader	Gregory S. Priest / Gregory S. Priest	8-22-00
b. Facility Reviewer(*)	RICHARD F. DRESCHER / Richard F. Drescher	8-24-00
c. NRC Chief Examiner (*)	Bobby L. Holbrook / [illegible]	9/8/00 / 9/8/00
d. NRC Supervisor (*)	MICHAEL E. ERNSTES / Michael E. Ernstes	9/11/00

(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.

Facility: **Sequoyah** Date of Examination: **8/7 - 21/00**

	Task Description	Date Complete
1.	Facility written exam comments or graded exams received and verified complete	8/25
2.	Facility written exam comments reviewed and incorporated and NRC grading completed, if necessary	9/8
3.	Operating tests graded by NRC examiners	9/13
4.	NRC Chief examiner review of written exam and operating test grading completed	9/13
5.	Responsible supervisor review completed	9/14
6.	Management (licensing official) review completed	9/15
7.	License and denial letters mailed	9/15
8.	Facility notified of results	9/15
9.	Examination report issued (refer to NRC MC 0610)	9/15
10.	Reference material returned after final resolution of any appeals	N/A