

Facility: <u>Peach Bottom Unit 2 & 3</u>		Date of Examination: <u>Week of Feb. 5, 2001</u>
Examination Level (circle one): RO (SRO)		Operating Test Number: <u>SRO - 1</u>
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Procedure Usage JPM	Verify a controlled procedure copy prior to use (JPM)
	Parameter Verification JPM	Perform a Manual Heat Balance (JPM)
A.2	Equipment Control JPM	Manually complete required Technical Specification Action Log entries for inoperable equipment (JPM)
A.3	Use of Personnel Radiation Monitoring Equipment JPM	Properly use a handheld Frisker to perform a Whole-Body Frisk (JPM)
A.4	Emergency Classification JPM	Classify an Emergency Event (JPM)

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7/12/01
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Facility: <u>Peach Bottom Unit 2 & 3</u>		Date of Examination: <u>Week of Feb. 5, 2001</u>
Examination Level (circle one): <u>ROY</u> SRO		Operating Test Number: <u>RO - 1</u>
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Procedure Usage JPM	Verify a controlled procedure copy prior to use (JPM)
	Parameter Verification JPM	Perform a Manual Heat Balance (JPM)
A.2	Clearance and Tagging JPM	Identify Clearance Boundaries for component maintenance (JPM)
A.3	Use of Personnel Radiation Monitoring Equipment JPM	Properly use a handheld Frisker to perform a Whole-Body Frisk (JPM)
A.4	Emergency Communicator JPM	Perform the duties of the NRC Communicator for an Emergency Event – Activate the Emergency Response Data System (JPM)

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BWR RO Examination Outline

Printed: 11/14/2000

Facility: Peach Bottom Atomic Power Stat

ES - 401

Emergency and Abnormal Plant Evolutions - Tier 1 / Group 3

Form ES-401-2

E/APE #	E/APE Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
295021	Loss of Shutdown Cooling / 4	X						AK1.01 - Decay heat	3.6	1
295023	Refueling Accidents / 8			X				AK3.03 - Ventilation isolation	3.3	1
295035	Secondary Containment High Differential Pressure / 5				X			EA1.01 - Secondary containment ventilation system	3.6	1
295035	Secondary Containment High Differential Pressure / 5		X					EK2.02 - SBTG/FRVS	3.6	1

K/A Category Totals: 1 1 1 1 0 0

Group Point Total: 4

BWR RO Examination Outline

Printed: 11/14/2000

Facility: Peach Bottom Atomic Power Stat

ES - 401 Plant Systems - Tier 2 / Group 1 Form ES-401-2

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
201001	Control Rod Drive Hydraulic System / 1							X					A1.01 - CRD drive water header pressure	3.1	1
201001	Control Rod Drive Hydraulic System / 1						X						K6.01 - Condensate system	2.8	1
202002	Recirculation Flow Control System / 1			X									K3.01 - Core flow	3.5	1
203000	RHR/LPCI: Injection Mode (Plant Specific) / 2		X										K2.01 - Pumps	3.5*	1
203000	RHR/LPCI: Injection Mode (Plant Specific) / 2		X										K2.02 - Valves	2.5*	1
206000	High Pressure Coolant Injection System / 2									X			A3.01 - Turbine speed: BWR-2, 3, 4	3.6	1
209001	Low Pressure Core Spray System / 2										X		A4.05 - Manual initiation controls	3.8	1
211000	Standby Liquid Control System / 1		X										K2.01 - SBLC pumps	2.9*	1
211000	Standby Liquid Control System / 1	X											K1.01 - Core spray line break detection: Plant-Specific	3.0*	1
212000	Reactor Protection System / 7									X			A3.01 - Reactor power	4.4*	1
215003	Intermediate Range Monitor (IRM) System / 7			X									K3.04 - Reactor power indication	3.6	1
215003	Intermediate Range Monitor (IRM) System / 7							X					A2.01 - Power supply degraded	2.8	1

BWR RO Examination Outline

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Facility: Peach Bottom Atomic Power Stat

ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
215005	Average Power Range Monitor/Local Power Range Monitor System / 7				X								K4.07 - Flow biased trip setpoints	3.7	1
215005	Average Power Range Monitor/Local Power Range Monitor System / 7								X				A2.02 - Upscale or downscale trips	3.6	1
217000	Reactor Core Isolation Cooling System (RCIC) / 2								X				A2.03 - Valve closures	3.4	1
217000	Reactor Core Isolation Cooling System (RCIC) / 2					X							K5.06 - Turbine operation	2.7*	1
223001	Primary Containment System and Auxiliaries / 5				X								K4.05 - Maintains proper suppression pool to drywell differential pressure	2.9	1
223002	Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5						X						K6.06 - Various process instrumentation	2.8	1
223002	Primary Containment Isolation System/Nuclear Steam Supply Shut-Off / 5			X									K3.16 - Shutdown cooling system/RHR	3.2	1
239002	Relief/Safety Valves / 3						X						K6.02 - Air (Nitrogen) supply: Plant-Specific	3.4	1
239002	Relief/Safety Valves / 3											X	2.1.32 - Ability to explain and apply system limits and precautions.	3.4	1
241000	Reactor/Turbine Pressure Regulating System / 3					X							K5.05 - Turbine inlet pressure vs. turbine load	2.8	1
241000	Reactor/Turbine Pressure Regulating System / 3							X					A1.21 - Main condenser vacuum	3.4	1

BWR RO Examination Outline

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ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

Sys/Ev #	System / Evolution Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
259001	Reactor Feedwater System / 2											X	A4.03 - Feedwater heater/drain controls	2.9	1
259002	Reactor Water Level Control System / 2	X											K1.04 - Reactor feedwater flow	3.5	1
261000	Standby Gas Treatment System / 9				X								K4.01 - Automatic system initiation	3.7	1
264000	Emergency Generators (Diesel/Jet) / 6	X											K1.01 - A.C. electrical distribution	3.8	1
264000	Emergency Generators (Diesel/Jet) / 6											X	A4.04 - Manual start, loading, and stopping of emergency generator: Plant-Specific	3.7	1

K/A Category Totals: 3 3 3 3 2 3 2 3 2 3 1

Group Point Total: 28

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q# K/A	SRO Only		
131	H	-												S	SRO only NRC 1999
132	M	3												S	SRO only
134	M	2												S	SRO only
135	M	-												S	NRC 1998
136	M	3												S	
137	M	3												S	SRO only
138	H	-												S	SRO only NRC 1999
141	H	-												S	SRO only NRC 1999
142	H	4												S	SRO only
143	H	4		X										S	SRO only- Remove T.S. safety limit reference to be handed out.

Instructions

[Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts.]

- Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.
- 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).
- 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).
- 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.
- Check the appropriate box if the sampled question does not match the approved K/A or an SRO-only question is not at the SRO level.
- 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?
- 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. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q# K/A	SRO Only		
145	M	-												S	NRC 1999
146	H	4												S	SRO only
147	H	3												S	
148	H	3		X										S	Discussed removal of possible reference cue in stem. NO CHANGE
149	H	-												S	NRC 1999
150	H	3		X										S	Discussed removal of possible reference cue in stem. NO CHANGE
152	M	3												S	SRO only
153	H	4												S	
155	M	2											x	S	Not SRO level. NOT COUNTED AS 1 OF 25 SRO QUESTIONS
156	H	4	x	x										E	Wordy stem & possible P/F Map cue. STEM SHORTENED
157	H	3											x	E	Not SRO level. REVISED TO COMPLY WITH 43.5
159	H	3												S	
161	H	3												S	
162	H	2												S	
163	H	3												S	
165	H	3												S	Questioned "MOORE" vs. "MOTOR" NO CHANGE MADE
166	H	3												S	
168	H	3												S	
170	H	4												S	
171	H	4												S	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q# K/A	SRO Only		
172	H	3												S	
173	H	1												U	To easy. QUESTION REPLACED
175	H	3												S	
178	H	3												S	
179	H	3												S	
180	M	2					X							E	"b" & "c" could be correct. ADDED "A" & "B loop spray header
181	M	2												S	Possible cues in other questions. NO CHANGE MADE
182	H	4												S	
185	H	-											x	S	Not SRO level. Reference 43.6 NRC 1998 NO CHANGE MADE
186	H	2												S	
187	M	3												S	
188	M	2												S	
190	M	3												S	
191	H	3												S	
192	H	3		X										E	Possible cue in stem. STEM REVISED
193	H	3											X	S	Not SRO level. NOT COUNTED AS SRO ONLY
196	M	2												S	
197	M	2												S	
198	M	2												S	
199	M	2												S	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q# K/A	SRO Only			
200	H	3												S		
201	H	3												S		
202	H	3												S		
204	H	3												S		
206	H	3												S		
207	H	3												S	Suggested editorials in stem. NO CHANGE MADE SRO only	
208	H	2												S		
209	M	2												S		
212	H	3												S	SRO only	
213	H	-												S	NRC 1997	
215	H	4											x	U	Not SRO level Two possible correct answers (b&c). REVISED	
216	H	3												S		
218	M	2												x	E	Not SRO level. NRC 1998 REVISED TO COMPLY WITH 43.5
219	M	2												S		
220	H	2												S		
221	M	2						x						E	"b" possibly correct also. REVISED DISTRACTOR "B"	
222	H	3												E	SRO level. Changed should to shall and added procedure reference.	
223	M	3												x	S	Not SRO only. Not counted as 1 of 25 SRO questions.
224	M	3												S		
225	M	2												S		

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q* K/A	SRO Only		
226	H	2												S	
227	M	2												S	
228	M	2												S	
229	H	2												S	
230	M	2												S	SRO only
231	M	1												U	Weak Distractors. REVISED DISTRACTORS
232	H	2												S	
233	H	3												S	
234	H	3												S	
235	M	-												S	NRC 1999
236	M	-												S	NRC 1999
238	M	2												S	
239	H	2	x	x										S	SRO only. Possible cue in stem. NO CHANGE MADE
240	M	2												S	
241	H	2	x			x								S	Suggest changing " may" to" will". Is mechanical credible? NO CHANGE
242	M	2												S	SRO only
243	M	3												S	SRO only
244	M	3												S	
245	M	-												S	NRC 1999
246	M	-												S	NRC 1999

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws					5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q/K/A	SRO Only			
247	H	4	X												E	SRO only. Add minimum to stem. REVISED QUESTION
248	M	2													S	
249	M	3													S	
250	M	2				X									S	Are "A" & "C" credible? NO CHANGE MADE
251	H	3													S	
252	M	3													S	
254	H	-													S	SRO only. NRC 1999
255	M	2													S	SRO only
256	M	2													S	SRO only
257	M	-													S	NRC 1999
<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>	<u>RO</u>
130	M	-													S	NRC 1999
133	H	2													S	
139	M	2													S	
140	H	3													S	
144	M	-													S	NRC 1999
151	M	3													S	
154	H	3													S	
158	H	4													S	
160	H	3													S	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q# K/A	SRO Only		
164	M	3												S	
167	H	2												S	
169	H	2												S	
174	M	2												S	
176	H	3												S	
177	M	2												S	
183	H	3												S	
184	M	3												S	
189	M	2												S	
194	M	2												S	
195	H	3												S	
203	M	2												S	
205	H	3												S	
210	M	3												S	
211	M	2												S	
214	H	3												S	
217	M	3												S	
237	H	3												S	
253	H	2												S	