

Facility: <u>McGuire Nuclear Station</u>		Date of Examination: <u>8/2/2010</u>
Developed by: Written - Facility <input type="checkbox"/> NRC <input type="checkbox"/> // Operating - Facility <input type="checkbox"/> NRC <input type="checkbox"/>		
Target Date*	Task Description (Reference)	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a and b)	2/3/2010
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	4/4/2010 2/17/10
-120	3. Facility contact briefed on security and other requirements (C.2.c)	4/4/2010 2/17/10
-120	4. Corporate notification letter sent (C.2.d)	4/4/2010 2/17/10
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 3)]	5/4/2010
{-75}	6. Integrated examination outline(s) due, including Forms ES-201-2, ES-201-3, ES-301-1, ES-301-2, ES-301-5, ES-D-1's, ES-401-1/2, ES-401-3, and ES-401-4, as applicable (C.1.e and f; C.3.d)	5/19/2010 4/30/2010 (O)
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	5/24/2010 5/07/2010
{-45}	8. Proposed examinations (including written, walk-through JPMs, and scenarios, as applicable), supporting documentation (including Forms ES-301-3, ES-301-4, ES-301-5, ES-301-6, and ES-401-6, and any Form ES-201-3 updates), and reference materials due (C.1.e, f, g and h; C.3.d)	6/18/2010 5/17/2010 (W) 5/24/2010 (O)
-30	9. Preliminary license applications (NRC Form 398's) due (C.1.i; C.2.g; ES-202)	7/3/2010
-14	10. Final license applications due and Form ES-201-4 prepared (C.1.i; C.2.i; ES-202)	7/19/2010
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	7/19/2010
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	7/19/2010
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	7/26/2010
-7	14. Final applications reviewed; 1 or 2 (if >10) applications audited to confirm qualifications / eligibility; and examination approval and waiver letters sent (C.2.i; Attachment 5; ES-202, C.2.e; ES-204)	7/26/2010
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	7/26/2010
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	7/26/2010

* Target dates are generally based on facility-prepared examinations and 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] {Does not apply} to examinations prepared by the NRC.

Note: Dates in **BLUE** are the “calendar” date populated by the excel program from Exelon. These are the “true” due dates required by NUREG 1021.

Date in **RED** are the agreed to submittal dates with Ron Aiello. Some of these are different from the “calendar” dates.

Where there is no **RED** date, the original calendar date is being used as the required date for this exam.

Facility:	McGuire	Date of Examination:	8/2/10	
Item	Task Description	Initials		
		a	b*	c#
W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model per ES-401.	FBK	JH	✓
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.	FBK	JH	✓
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	FBK	JH	✓
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	FBK	JH	✓
S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	DLR	JH	✓
	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; and ensure that 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 on subsequent days.	DLR	JH	✓
	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.	DLR	JH	✓
W / T	a. Verify that systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks, distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form, (3)* no tasks are duplicated from the applicants' audit test(s) (4) the number of alternate path, low-power, emergency and RCA tasks meet the criteria on the form.	DLR	JH	✓
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations	DLR	JH	✓
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	DLR	JH	✓
G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	DLR	JH	✓
	b. Assess whether the 10CFR 55.41/43 and 55.45 sampling is appropriate.	DLR	JH	✓
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	DLR	JH	✓
	d. Check for duplication and overlap among exam sections.	DLR	JH	✓
	e. Check the entire exam for balance of coverage.	DLR	JH	✓
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	DLR	JH	✓
a. Author	Fred B Kirk / <i>[Signature]</i> David Lazarony / Western Technical Services, Inc.		Date	4/29/10
b. Facility Reviewer (*)	STEVEN A. HELMS / <i>[Signature]</i>		Date	4-29-10
c. NRC Chief Examiner (#)	RONALD F. ADOLFO / <i>[Signature]</i>		Date	5/13/10
d. NRC Supervisor	MALCOLM T. WILSON / <i>[Signature]</i>		Date	6/13/10
NOTE: # Independent NRC reviewer initial items in Column "c", chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines				

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 08/02/2010 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC (e.g., acting as a simulator booth operator or communicator is acceptable if the individual does not select the training content or provide direct or indirect feedback). Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 08/02/2010. From the date that I entered into this security agreement until the completion of examination administration, I did not instruct, evaluate, or provide performance feedback to those applicants who were administered these licensing examinations, except as specifically noted below and authorized by the NRC.

PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1. <u>H. Clark Fletcher</u>	<u>NRC Exam Developer</u>	<u>H. Clark Fletcher</u>	<u>02/02/10</u>	<u>H. Clark Fletcher</u>	<u>9-15-10</u>
2. <u>Fred B Kink Jr</u>	<u>NRC EXAM Developer</u>	<u>Fred B Kink Jr</u>	<u>03/03/10</u>	<u>Fred B Kink Jr</u>	<u>9-17-10</u>
3. <u>JOHN K SUPTER</u>	<u>TRAINING COE</u>	<u>John K Supter</u>	<u>2/23/10</u>	<u>John K Supter</u>	<u>8/25/10</u>
4. <u>Steven L. Mosteller</u>	<u>Site Facility Representative</u>	<u>Steven L. Mosteller</u>	<u>3/17/10</u>	<u>Steven L. Mosteller</u>	<u>8/12/10</u>
5. <u>Earl Hampton</u>	<u>Fleet Trng. Mgr</u>	<u>Earl Hampton</u>	<u>3-22-10</u>	<u>Earl Hampton</u>	<u>9/1/10</u>
6. <u>Vickie Mc Ginnis</u>	<u>Admin Specialist</u>	<u>Vickie Mc Ginnis</u>	<u>3-22-10</u>	<u>Vickie Mc Ginnis</u>	<u>8/23/10</u>
7. <u>PAUL STOVALL</u>	<u>COE TRNG</u>	<u>Paul Stovall</u>	<u>3-23-10</u>	<u>Paul Stovall</u>	<u>8/12/10</u>
8. <u>STEVE DYER</u>	<u>CONTRACTOR</u>	<u>Steve Dyer</u>	<u>4/1/10</u>	<u>Steve Dyer</u>	<u>8/15/10</u>
9. <u>STEVEN HELMS</u>	<u>SUPERVISOR OPS TRNG</u>	<u>Steven Helms</u>	<u>4-7-10</u>	<u>Steven Helms</u>	<u>8-19-10</u>
10. <u>John H. Sadler</u>	<u>Simulator Support</u>	<u>John H. Sadler</u>	<u>4/10/10</u>	<u>John H. Sadler</u>	<u>8/30/2010</u>
11. <u>Robert C. Adams</u>	<u>Sim Support</u>	<u>Robert C. Adams</u>	<u>4/12/10</u>	<u>Robert C. Adams</u>	<u>8/19/2010</u>
12. <u>SURHASA KUMAR</u>	<u>Sim Support</u>	<u>Surhasa Kumar</u>	<u>4/12/10</u>	<u>Surhasa Kumar</u>	<u>8/21/10</u>
13. <u>Dennis Taylor</u>	<u>Sim Support</u>	<u>Dennis Taylor</u>	<u>4/12/10</u>	<u>Dennis Taylor</u>	<u>8/31/10</u>
14. <u>Q.E. ELAM</u>	<u>IT PROFESSIONAL</u>	<u>Q.E. Elam</u>	<u>4-15-2010</u>	<u>Q.E. Elam</u>	<u>8/26/2010</u>
15. <u>VICKIE BREWER</u>	<u>ADM. SPECIALIST</u>	<u>Vickie Brewer</u>	<u>4/13/10</u>	<u>Vickie Brewer</u>	<u>8/26/10</u>

NOTES:

1. Pre-Examination

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2. Post-Examination

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PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1. Reginald L. Parker	RO / validator	<i>Reginald L. Parker</i>	4/19/10	<i>Reginald L. Parker</i>	8/24/10
2. W. R. BAKER	simulated support	<i>W. R. Baker</i>	4/19/10	<i>W. R. Baker</i>	8/17/10
3. TJ MARVIN GILCO	SHIFT SRO	<i>TJ Gilco</i>	4-26-10	<i>TJ Gilco</i>	8-31-10
4. DAVID O'DONELL	RO	<i>David O'Donnell</i>	4/27/10	<i>David O'Donnell</i>	9/9/10
5. Mark Rosskamp	SRO	<i>Mark Rosskamp</i>	4/27/10	<i>Mark Rosskamp</i>	8/24/10
6. Gabriel WASHBURN	Peer review -ONS-	<i>Gabriel Washburn</i>	4/27/10	<i>Gabriel Washburn</i>	9/9/10
7. Cliff Witherspoon	Peer review	<i>Cliff Witherspoon</i>	4/27-10	<i>Cliff Witherspoon</i>	9/9/10
8. ROGER DEHAET	SRO	<i>Roger Dehaet</i>	5/5/10	<i>Roger Dehaet</i>	7/1/10
9. DARYL BLACKWELDER	SRO	<i>Daryl Blackwelder</i>	5/5/10	<i>Daryl Blackwelder</i>	08/19/10
10. David Punch	Reactor Engineer	<i>David Punch</i>	5/5/10	<i>David Punch</i>	8/31/2010
11. Daniel E. McCarter	SRO	<i>Daniel E. McCarter</i>	5-8-10	<i>Daniel E. McCarter</i>	7-26-10
12. Naam Flynn	RO	<i>Naam Flynn</i>	5/8/10	<i>Naam Flynn</i>	9-10-10
13. Bill Mason	RO	<i>Bill Mason</i>	5-8-10	<i>Bill Mason</i>	9-7-10
14. T.R. HALL	RO	<i>T.R. Hall</i>	5-9-10	<i>T.R. Hall</i>	9/7/10
15. SCOTT T FORTIN	RO	<i>Scott Fortin</i>	5-10-10	<i>Scott Fortin</i>	8/19/10

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1.	Kay Crane	Senior Licensing Specialist	<i>Kay Crane</i>	7-7-10	<i>Kay Crane</i>	9-13-10
2.	Leahel Brown	D Shift Nuclear Supervisor	<i>Leahel Brown</i>	7/13/10	<i>Leahel Brown</i>	9-15-10
3.	LARRY SARANTY	Shift ops Manager	<i>Larry Saranty</i>	8/2/10	<i>Larry Saranty</i>	7/1/10
4.	MARC MULLOY	OPS Instructor	<i>Marc Mulloy</i>	8/2/10	<i>Marc Mulloy</i>	8/23/10
5.	Garry Hull	" "	<i>Garry Hull</i>	8/2/10	<i>Garry Hull</i>	8/13/10
6.	Bill Shear	" "	<i>William Shear</i>	8/2/10	<i>William Shear</i>	8/23/10
7.	James Schell	E Shift SRO	<i>J Schell</i>	8-2-10	<i>J Schell</i>	8-26-10
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1. <u>DAVID LAZAROVY</u>	<u>Exam Developer</u>	<u>[Signature]</u>	<u>2/29/10</u>	<u>David Lazarovy</u>	<u>9-9-10</u>	<u>AS/Hub via email</u>
2. <u>DAVID OGDEN</u>	<u>RO</u>	<u>[Signature]</u>	<u>5-11-10</u>	<u>[Signature]</u>	<u>8-31-10</u>	
3. <u>DAVID BICE</u>	<u>RO</u>	<u>[Signature]</u>	<u>5-11-10</u>	<u>[Signature]</u>	<u>8-31-10</u>	
4. <u>Nathan Poston</u>	<u>Instructor</u>	<u>[Signature]</u>	<u>5-12-10</u>	<u>[Signature]</u>	<u>9-17-10</u>	
5. <u>DEVAN SIMMERSON</u>	<u>RO</u>	<u>[Signature]</u>	<u>5/12/10</u>	<u>[Signature]</u>	<u>8-31-10</u>	
6. <u>WALTER MOORE</u>	<u>SRO</u>	<u>[Signature]</u>	<u>5-18-10</u>	<u>[Signature]</u>	<u>8-31-10</u>	
7. <u>Larry Kudick</u>	<u>SRO</u>	<u>[Signature]</u>	<u>5/19/10</u>	<u>[Signature]</u>	<u>9-30-10</u>	
8. <u>Timothy J Stroupe</u>	<u>RO</u>	<u>[Signature]</u>	<u>6/14/10</u>	<u>[Signature]</u>	<u>9-9-10</u>	<u>Timothy J Stroupe via email</u>
9. <u>Scott Slieter</u>	<u>RO</u>	<u>[Signature]</u>	<u>6/14/10</u>	<u>[Signature]</u>	<u>9-9-10</u>	<u>Scott Slieter via email</u>
10. <u>RICK MARTIN</u>	<u>RO</u>	<u>[Signature]</u>	<u>6/14/10</u>	<u>[Signature]</u>	<u>9-13-10</u>	<u>Rick Martin via email</u>
11. <u>Thad Regmes</u>	<u>SRO</u>	<u>[Signature]</u>	<u>6-14-10</u>	<u>[Signature]</u>	<u>8-23-10</u>	
12. <u>DENNIS MOORE</u>	<u>SRO</u>	<u>[Signature]</u>	<u>6/16/10</u>	<u>[Signature]</u>	<u>9/7/10</u>	
13. <u>DENNIS MCCORRICK</u>	<u>SHIFT OPS MANAGER</u>	<u>[Signature]</u>	<u>6/22/10</u>	<u>[Signature]</u>	<u>8/23/10</u>	
14. <u>ROBBY POPE</u>	<u>OPS TRN MANAGER</u>	<u>[Signature]</u>	<u>7-11-10</u>	<u>[Signature]</u>	<u>8/31/10</u>	
15. <u>LARRY RHODES</u>	<u>OPS TRN Shift Mgr.</u>	<u>[Signature]</u>	<u>7/5/10</u>	<u>[Signature]</u>	<u>8/13/10</u>	

NOTES:

McGUIRE 2010

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1.	JOSEPH ARSENAULT	REVIEWER	<i>Joseph Arsenault</i>	4/1/10	<i>Joseph Arsenault</i> <small>via email FAX</small>	9-9-10	
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Facility: McGuire	Date of Examination: 8/2/10	
Examination Level: RO	Operating Test Number: N10-1	
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	2.1.37 (4.3) Knowledge of procedures, guidelines or limitations associated with reactivity management JPM: Perform an ECP
Conduct of Operations	D, P, R	2.1.25 (3.9) Ability to interpret reference materials, such as graphs, curves, tables, etc. JPM: Determine Boric Acid Addition to FWST
Equipment Control	M, R	2.2.12 (3.7) Knowledge of Surveillance Procedures. JPM: Perform a Manual NC Leakage Calculation
Radiation Control	M, R	2.3.11 (3.8) Ability to control radiation releases JPM: Perform a Unit Vent Flow Calculation of a Containment Air Release
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.		
*Type Codes & Criteria: (C)ontrol room, (0) (S)imulator, (0) or Class(R)oom (4) (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (1) (N)ew or (M)odified from bank (≥ 1) (3) (P)revious 2 exams (≤ 1 ; randomly selected) (1)		

RO Admin JPM Summary

- A1a This is a modified JPM using Bank JPM-RT-RB:073 as its basis. The operator will be told that Reactor Startup is an hour away, and provided with a set of initial conditions. The operator will be asked to perform an Estimated Critical Position (ECP) in accordance with OP/0/A/6100/06 (Reactivity Balance Calculation), Enclosure 4.2 (Estimated Critical Rod Position). During the course of the ECP, the operator will be given a set of power history conditions, and asked to perform a Shutdown Fission Product Correction calculation in accordance with OP/0/A/6100/06 (Reactivity Balance Calculation), Enclosure 4.8 (Shutdown Fission Product Correction Calculation) in support of the ECP. This is the same JPM as the SRO Exam.
- A1b This is a bank JPM, and previously used on the 2009 NRC Operating Test. The operator will be told that a leak, which is now isolated has lowered the FWST level to 440 inches, and that it has been decided to use the Recycle Holdup Tank (RHT) to refill the FWST. The operator will be told that Enclosure 4.4, (FWST Makeup Using the RHT), of OP/1/A/6200/014 (Refueling Water System) is in progress and completed through Step 3.9, and provided with Chemistry Data for the BAT and RHT. The operator will then be directed to determine the amount of Boric Acid needed to raise the FWST level to 480" using the RHT in accordance with Step 3.10 of Enclosure 4.4 of OP/1/A/6200/014 (Refueling Water System). The operator will be expected to calculate the amount of Boric Acid that must be added from the BAT to refill the FWST.
- A2 This is a modified JPM using Bank JPMs ADM-NRC-A2-05 and 12 as its basis. The operator will be told that Unit 1 is at 100% power, the Unit 1 OAC point M1L4554 is out of service, and that PT/1/A/4200/040 (Reactor Coolant Leakage Detection) has been completed showing that NCS Leakage is 1.6 gpm. The operator will be given Enclosure 13.2 (NC Leakage Determination Using Manual Calculations) of PT/1/A/4150/001B (Reactor Coolant Leakage Calculation) with the necessary raw data compiled on a Data Sheet; and directed to complete the calculations within the Enclosure. The operator will be expected to complete all calculations, and identify any Technical Specification Limits that have been exceeded.
- A3 This is a modified JPM using Bank JPM ADM-NRC-A3-010 as its basis. The operator will be told that GWR Package # 2010013 for Unit 1 Containment Air Release is currently in use to conduct a series of Containment air releases, and that during the first release, conducted using Enclosure 4.2 (Air Release Mode With VQ Flow Monitor Operable) of OP/1/A/6450/017 (Containment Air Addition and Release), the Unit 1 VQ Monitor became inoperable. The operator will be told that the crew stopped the release and continued the air release using Enclosure 4.3 (Air Release Mode with VQ Flow Monitor Inoperable) of OP/1/A/6450/017 (Containment Air Addition and Release), and that three previous releases have been made; including the one which was made with the Unit 1 VQ Flow Monitor in operation. Finally, the operator will be provided with the pertinent data for the current release, and then be directed to calculate the volume released for the current release and to determine the total volume released from the Containment during all releases. The operator will be expected to calculate the volume of air released from the Containment during the final release, and determine the total volume of air released in the series of four releases.

Facility: McGuire	Date of Examination: 8/2/10	
Examination Level: SRO	Operating Test Number: N10-1	
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	2.1.37 (4.6) Knowledge of procedures, guidelines or limitations associated with reactivity management JPM: Perform an ECP
Conduct of Operations	D, P, R	2.1.25 (4.2) Ability to interpret reference materials, such as graphs, curves, tables, etc. JPM: Determine Boric Acid Addition to FWST
Equipment Control	M, R	2.2.12 (4.1) Knowledge of Surveillance Procedures. JPM: Perform/Review a Manual NC leakage Calculation
Radiation Control	M, R	2.3.11 (3.8) Ability to control radiation releases JPM: Perform a Unit Vent Flow Calculation of a Containment Air Release
Emergency Procedures/Plan	N, R	2.4.44 (4.4) Knowledge of emergency plan protective action recommendations. JPM: Provide an updated PAR
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.		
*Type Codes & Criteria: (C)ontrol room, (0) (S)imulator, (0) or Class(R)oom (5) (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (1) (N)ew or (M)odified from bank (≥ 1) (4) (P)revious 2 exams (≤ 1 ; randomly selected) (1)		

A

SRO Admin JPM Summary

- A1a This is a modified JPM using Bank JPM-RT-RB:073 as its basis. The operator will be told that Reactor Startup is an hour away, and provided with a set of initial conditions. The operator will be asked to perform an Estimated Critical Position (ECP) in accordance with OP/0/A/6100/06 (Reactivity Balance Calculation), Enclosure 4.2 (Estimated Critical Rod Position). During the course of the ECP, the operator will be given a set of power history conditions, and asked to perform a Shutdown Fission Product Correction calculation in accordance with OP/0/A/6100/06 (Reactivity Balance Calculation), Enclosure 4.8 (Shutdown Fission Product Correction Calculation) in support of the ECP. This is the same JPM as the RO Exam.
- A1b This is a bank JPM, and previously used on the 2009 Operating Test. The operator will be told that a leak, which is now isolated has lowered the FWST level to 440 inches, below the Technical Specification Limit, and that it has been decided to use the Recycle Holdup Tank (RHT) to refill the FWST. The operator will be told that Enclosure 4.4 (FWST Makeup Using the RHT), of OP/1/A/6200/014 (Refueling Water System) is in progress and completed through Step 3.10, and provided with Chemistry Data for the BAT and RHT. The operator will then be directed to perform the Independent Verification (SRO aspect) of the calculation in Step 3.10 of Enclosure 4.4 to determine the amount of Boric Acid that must be added from the Boric Acid Tank (BAT), in order to raise the FWST Level to 480" using the RHT. The operator will discover two errors within the previous calculation, and determine the correct volume of Boric Acid to add. Following this, the operator will be given a makeup flowrate to the FWST and asked to identify the impact on the Technical Specification ACTION. The operator will be required to identify that ACTION C is applicable after one hour.
- A2 This is a modified JPM using Bank JPMs ADM-NRC-A2-05 and 12 as its basis. The operator will be told that Unit 1 is at 100% power, the Unit 1 OAC point M1L4554 is out of service, and that PT/1/A/4200/040 (Reactor Coolant Leakage Detection) has been completed showing that NCS Leakage is 1.6 gpm. The operator will be given Enclosure 13.2 (NC Leakage Determination Using Manual Calculations) of PT/1/A/4150/001B (Reactor Coolant Leakage Calculation) with the necessary raw data compiled on a Data Sheet; and directed to complete the calculations within the Enclosure. The operator will be expected to complete all calculations in accordance with the provided Key, identify any Technical Specification Limits that have been exceeded, and (SRO aspect) identify with all Technical Specification ACTION.
- A3 This is a modified JPM using Bank JPM ADM-NRC-A3-010 as its basis. The operator will be told that GWR Package # 2010013 for Unit 1 Containment Air Release is currently in use to conduct a series of Containment air releases, and that during the first release, conducted using Enclosure 4.2 (Air Release Mode

With VQ Flow Monitor Operable) of OP/1/A/6450/017 (Containment Air Addition and Release), the Unit 1 VQ Monitor became inoperable. The operator will be told that the crew stopped the release and continued the air release using Enclosure 4.3 (Air Release Mode with VQ Flow Monitor Inoperable) of OP/1/A/6450/017 (Containment Air Addition and Release), and that three previous releases have been made; including the one which was made with the Unit 1 VQ Flow Monitor in operation. Finally, the operator will be provided with the pertinent data for the current release, and then be directed to calculate the volume released for the current release and to determine the total volume released from the Containment during all releases. The operator will be expected to calculate the volume of air released from the Containment during the final release, and determine the total volume of air released in the series of four releases. This is the same JPM as the RO Exam.

- A4 This is a new JPM. The operator will be placed in a post-accident condition with a Large Break LOCA with a release from the Containment. The operator will be told that a General Emergency has been declared, and provided with the initial Protective Action Recommendation (PAR). The operator will be given a subsequent set of plant conditions and meteorological data, and asked to provide an updated PAR in accordance with Enclosure 4.4 (Offsite Protective Recommendations) of RP/0/B/5700/029 (Notifications to Offsite Agencies from the Control Room). The operator will be expected to determine the Updated PAR for the subsequent conditions.

Facility:	McGuire	Date of Examination:	8/2/10
Exam Level (circle one):	<i>RO (only) / SRO(I) / SRO (U)</i>	Operating Test No.:	N10-1
Control Room Systems [®] (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)			
	System / JPM Title	Type Code*	Safety Function
a.	006 Emergency Core Cooling System Transfer the NI Pumps from Cold Leg Recirc to Hot Leg Recirc	S, D, EN	2
b.	005 Residual Heat Removal System Respond to ND System Malfunction While at Mid Loop	S, D, A, L	4P
c.	056 Condensate System Swap Hotwell/CM Booster Pumps	S, N, A	4S
d.	026 Containment Spray System Manually Actuate Containment Spray System	S, P, D, A, EN	5
e.	APE 077 Generator Voltage and Electric Grid Disturbances Separate From the Electrical Grid Due to Low Grid Frequency	S, N, A	6
f.	015 Nuclear Instrumentation System Restore Repaired Power Range Channel to Service	S, P, M	7
g.	075 Circulating Water System Isolate the Circulating Water System During Turbine Building Flooding	S, N	8
h.	010 Pressurizer Pressure Control System Remove Pressurizer Heaters from Service	S, N, A	3
In-Plant Systems [®] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i.	055 Condenser Air Removal System Startup Main Vacuum Pump	D, E	4S
j.	008 Component Cooling Water System Makeup to the Unit 1 KC Surge Tanks	D, R, E	8
k.	APE 057 Loss of Vital AC Electrical Instrument Bus Restore Power to KXB Power Panel Board Using Inverter SKX	D, R, E	6

<p>@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>	
* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 (5) / 4-6 (4) / 2-3 (3)
(C)ontrol room	
(D)irect from bank	≤ 9 (6) / ≤ 8 (6) / ≤ 4 (4)
(E)mergency or abnormal in-plant	≥ 1 (3) / ≥ 1 (3) / ≥ 1 (2)
(EN)gineered Safety Feature	- / - / ≥ 1 (1) (Control Room System)
(L)ow-Power / Shutdown	≥ 1 (1) / ≥ 1 (1) / ≥ 1 (1)
(N)ew or (M)odified from bank including 1(A)	≥ 2 (5) / ≥ 2 (4) / ≥ 1 (1)
(P)revious 2 exams	≤ 3 (2) / ≤ 3 (2) / ≤ 2 (1) (Randomly Selected)
(R)CA	≥ 1 (2) / ≥ 1 (2) / ≥ 1 (2)
(S)imulator	

JPM Summary

JPM A This is bank JPM-PS-NC-117. The operator will be told Unit 1 experienced a Loss of Coolant Accident six (6) hours ago, and that the plant is operating in the Cold Leg Recirculation mode. The operator will be directed to Transfer Recirculation to Hot Leg Recirc PER EP/1/A/5000/ES-1.4 (Transfer to Hot Leg Recirculation). The operator will be expected to align the NI System to the Hot Leg Recirc Mode.

JPM B This is bank JPM PS-ND-183A. The operator will be told that Unit 1 is in Mode 5 with the NC System drained to approximately 10 inches, that 1A ND Pump is in service to all four Cold Legs, and that ND flow has suddenly increased. The operator will be directed to implement AP/1/A/5500/19 (Loss of ND or ND System Leakage). The operator will be expected to take manual action to control flow, but recognize that attempts to manually control the RHR HX Outlet Valve and the Bypass Valve are ineffective (Alternate Path). The operator will be expected to throttle ND flow to less than 3000 gpm using the Cold Leg injection valve(s) and position the ND Heat Exchanger Outlet Manual Loaders so that when these valves are repaired, the ND flow will not be affected.

JPM C This is a new JPM. The operator will be told that Unit 1 is operating at 90% power in preparation for a Condensate System Pump Swap. The operator will be directed to start the C Hotwell Pump, and place the A Hotwell Pump in standby, and then start the C Condensate Booster Pump and place the A Condensate Booster Pump in standby using Enclosure 4.5 of OP/1/A/6250/001 (Condensate and Feedwater System). The operator will be expected to swap both sets of pumps in accordance with the procedure. During the course of swapping the Condensate Booster Pumps, the operator will recognize that the C Hotwell Pump Strainer High ΔP Annunciator will alarm (Alternate Path). The operator will be expected to use the Annunciator Response Procedure and re-start the A Hotwell Pump, and stop the C Hotwell Pump.

JPM D This JPM is a bank JPM, and was previously used on the 2008 NRC Operating Test. The operator will be placed in a Post-Reactor Trip situation and told that the crew has progressed from EP/1/A/5000/E-0 (Reactor Trip and/or Safety Injection) to EP/1/A/5000/ES-0.1 (Reactor Trip Response) due to a reactor trip. The operator will be told that after entry into ES-0.1 a LOCA occurs inside the Containment causing a Safety

Injection; and that the crew has now left ES-0.1 for EP/1/A/5000/FR-Z.1 (Response to High Containment Pressure) due to the Orange Path condition on the Containment Critical Safety Function, completing steps 1-9. The operator will be directed to check the NS System in Operation in accordance with step 10 of FR-Z.1. Although Containment Pressure will be > 3 psig, automatic actuation of Containment Spray (NS) will have failed. Additionally, the NS manual actuators will fail to operate requiring that the operator take manual action to start the NS Pumps and open the discharge valves. The operator will need to manually open the NS Pump discharge valves and manually start the NS Pumps. When attempts are made to manually open the A Train discharge valves, they will not open (Alternate Path), requiring the operator to make no attempt to start the 1A NS pump.

JPM E This is a new JPM. With the plant at 77% power, the operator will be told that the crew has entered AP/1/A/5500/05 (Generator Voltage and Electrical Grid Disturbances) due to low Electrical Grid frequency, and that the procedure is completed up to Step 15. The operator will be directed to separate from the Electrical Grid without delay in accordance with Step 15 of AP/1/A/5500/05 (Generator Voltage and Electrical Grid Disturbances). Since plant power is greater than 60%, the operator will be required to reduce load. When the operator attempts to operate the turbine in automatic, Turbine power will fail to lower (Alternate Path). The operator will be expected to recognize that the Turbine has failed, and lower power manually, and then disconnect the Turbine Generator from the Electrical Grid.

JPM F This JPM is a modified version of a similar JPM used on the 2009 NRC Operating Test. The Operator will be placed in a situation with Unit 1 at 100% power. The operator will be told that Power Range Channel N43 has previously failed low, and that the channel has been defeated in accordance with AP/1/A/5500/16, "Malfunction of Nuclear Instrumentation," Case III, "Power Range Malfunction." The operator will be asked to restore Power Range Channel N43 to service in accordance with Step 21 of AP16, "Malfunction of Nuclear Instrumentation," Case III, "Power Range Malfunction." The operator will be required to restore the channel to service in accordance with the procedure.

JPM G This is a new JPM. The operator will be told that there is massive flooding in the Turbine Building and that the crew has implemented AP/0/A/5500/44 (Plant Flooding), Enclosure 1 (Unit 1 Turbine Bldg Flooding). The operator will be directed to isolate the RC System by performing steps 6.d-v of the procedure, while the crew continues with EP/1/A/5000/E-0 (Reactor Trip and/or Safety Injection). The operator will be expected to take all pump and valve control switch manipulations to isolate the RC System. This task was chosen because Internal Flooding events are a large PRA contributor (15% CDF). This is a Time Critical JPM that must be complete in 40 Minutes.

JPM H This is a new JPM. The operator will be told that plant power has just been raised to 100% per OP/1/A/6100/003 (Controlling Procedure for Unit Operation). The operator will be directed to remove Pzr Heater Groups A, B and D from service per Enclosure 4.6 (Operation of Pzr Heaters) of OP/1/A/6100/003. The operator will be expected to remove the A, B and D Pzr Heater Groups from service in accordance with Step 3.4.4 of Enclosure 4.6. After the Pzr Pressure Master has been placed in MANUAL and its output has been adjusted, the Pzr variable Heaters (Group C) will fail (Alternate Path). The operator will be required to respond to MCB Annunciator 1AD6/D6 (PZR HTR CONTROLLER TROUBLE), and manually control pressure using the other heater

groups. The operator will be expected to place at least one Pzr Heater Group in service in accordance with Step 3.3.1 (or equivalent) of Enclosure 4.6.

- JPM I This is Bank JPM MT-ZM-96. The operator will be told that Unit 1 has experienced a loss of main condenser vacuum, that the CRS has implemented AP/1/A/5500/23 (Loss of Condenser Vacuum), and that the RO reports that main condenser vacuum indicates 24 inches and decreasing. The operator will be directed to start the "A" Main Vacuum Pump and align it to the Unit 1 Main Condenser per OP/1/B/6300/006 (Main Vacuum and Vacuum Priming) Enclosure 4.7 (ZM Pump Startup). The operator will place the "A" Main Vacuum Pump in service aligned to Unit 1 Main Condenser.
- JPM J This is bank JPM PSS-KC-165T. The operator will be told that Unit 1 is operating at 100% power when the KC Surge Tank A and B lo level computer alarms are received, that the surge tank levels are 3.9 feet and decreasing, and that AP/1/A/5500/21 (Loss of KC or KC System Leakage) has been implemented. Since the YM System will be out of service, the operator will be directed to initiate makeup to both Unit 1 KC Surge Tanks per AP/1/A/5500/21 (Loss of KC or KC System Leakage), Enclosure 3 (Aligning RN Makeup to KC Surge Tank). This is a Time Critical JPM. The operator will be expected to manipulate valves, and communicate with the C/R to restore KC Surge Tank level within ten minutes of dispatch. This is a Time Critical JPM that must be complete in 10 Minutes.
- JPM K This is bank JPM EL-EPK-199. The operator will be told that AP/1/A/5500/15 (Loss of Vital or Aux Control Power) has been implemented due to a loss of Aux Control Power Panel Board KXB, and that prior to the event, all electrical systems were aligned in their normal operating configurations. The operator will be directed to energize KXB using inverter SKX per Enclosure 24 of AP/1/A/5500/15 (Loss of Vital or Aux Control Power). The operator will be expected to align Inverter SKX to provide power to KXB power panel board.

Facility:	McGuire	Date of Examination:	8/2/10	Operating Test Number: N10-1
1. GENERAL CRITERIA				Initials
				a b* 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).	DK	JK	/
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	DK	JK	/
c.	The operating test shall not duplicate items from the applicants' audit test(s) (see Section D.1.a).	DK	JK	/
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	DK	JK	/
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	DK	JK	/
2. WALK-THROUGH CRITERIA				- - -
a.	Each JPM includes the following, as applicable: * initial conditions * initiating cues * references and tools, including associated procedures * reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time-critical by the facility licensee * operationally important 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	DK	JK	/
b.	Ensure that any changes from the previously approved systems and administrative walk-through outlines (Forms ES-301-1 and 2) have not caused the test to deviate from any of the acceptance criteria (e.g., item distribution, bank use, repetition from the last 2 NRC examinations) specified on those forms and Form ES-201-2.	DK	JK	/
3. SIMULATOR CRITERIA				- - -
The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.				DK JK /
	Printed Name / Signature	Date		
a.	Author David Lazarony, Western Technical Services, Inc.	7/8/10		
b.	Facility Reviewer (*) Fred B Kirk Jr / Fred B Kirk Jr	7/15/10		
c.	NRC Chief Examiner (#) Ron Avella	7/26/10		
d.	NRC Supervisor MALCOLM T. WIDMANN	07/27/10		
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.				

Facility: McGuire Date of Exam: 8/2/10 Scenario Numbers: 1 2 3 Operating Test No.: N10-1

QUALITATIVE ATTRIBUTES				Initials		
				a	b*	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.	JK	JK	JK		
2.	The scenarios consist mostly of related events.	JK	JK	JK		
3.	Each event description consists of <ul style="list-style-type: none"> 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) 	JK	JK	JK		
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.	JK	JK	JK		
5.	The events are valid with regard to physics and thermodynamics.	JK	JK	JK		
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	JK	JK	JK		
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.	JK	JK	JK		
8.	The simulator modeling is not altered.	JK	JK	JK		
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	JK	JK	JK		
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.5 of ES-301.	JK	JK	JK		
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	JK	JK	JK		
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).	JK	JK	JK		
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	JK	JK	JK		
Target Quantitative Attributes (Per Scenario; See Section D.5.d)				Actual Attributes		
				1	2	3
1.	Total malfunctions (5-8)	9	6	9	JK	JK
2.	Malfunctions after EOP entry (1-2)	2	1	2	JK	JK
3.	Abnormal events (2-4)	4	3	4	JK	JK
4.	Major transients (1-2)	1	1	1	JK	JK
5.	EOPs entered/requiring substantive actions (1-2)	1	1	1	JK	JK
6.	EOP contingencies requiring substantive actions (0-2)	1	0	1	JK	JK
7.	Critical tasks (2-3)	2	2	2	JK	JK

Facility:	McGuire	Date of Exam:	8/2/10	Scenario Numbers:	4	Operating Test No.:	N10-1		
QUALITATIVE ATTRIBUTES							Initials		
							a	b*	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.					JK	JK		
2.	The scenarios consist mostly of related events.					JK	JK		
3.	Each event description consists of <ul style="list-style-type: none"> 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) 					JK	JK		
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.					JK	JK		
5.	The events are valid with regard to physics and thermodynamics.					JK	JK		
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.					JK	JK		
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.					JK	JK		
8.	The simulator modeling is not altered.					JK	JK		
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.					JK	JK		
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.5 of ES-301.					JK	JK		
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).					JK	JK		
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).					JK	JK		
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.					JK	JK		
Target Quantitative Attributes (Per Scenario; See Section D.5.d)					Actual Attributes				
					4				
1.	Total malfunctions (5-8)				7				
2.	Malfunctions after EOP entry (1-2)				2				
3.	Abnormal events (2-4)				3				
4.	Major transients (1-2)				1				
5.	EOPs entered/requiring substantive actions (1-2)				2				
6.	EOP contingencies requiring substantive actions (0-2)				0				
7.	Critical tasks (2-3)				2				

Facility:		McGuire		Date of Exam:		8/2/10		Operating Test No.:		N10-1							
A P P L I C A N T	E V E N T T Y P E	Scenarios															
		N010-1-2			N010-1-3			N10-1-1			N10-1-4 (Spare)			T O T A L	M I N I M U M (*)		
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N				R	I	U
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P				
SROU-1	RX													0	1	1	0
	NOR	4			1									2	1	1	1
	I/C	1,2, 3,5, 6			2,3, 4,5, 6									10	4	4	2
	MAJ	7			7									2	2	2	1
	TS	2,3			4,5									4	0	2	2
SROU-2	RX													0	1	1	0
	NOR	4			1									2	1	1	1
	I/C	1,2, 3,5, 6			2,3, 4,5, 6									10	4	4	2
	MAJ	7			7									2	2	2	1
	TS	2,3			4,5									4	0	2	2
SROI-1	RX					1								1	1	1	0
	NOR	4						1						2	1	1	1
	I/C	1,2, 3,5, 6			2,3			2,3, 4,5, 6						12	4	4	2
	MAJ	7			7			7						3	2	2	1
	TS	2,3						2,3, 4						5	0	2	2
RO-1	RX		4											1	1	1	0
	NOR					1								1	1	1	1
	I/C		2,5			5,6								4	4	4	2
	MAJ		7			7								2	2	2	1
	TS													0	0	2	2

Instructions:

- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must service in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO additionally serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
- Reactivity manipulations may be conducted under normal or controlled abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility:		McGuire		Date of Exam:		8/2/10		Operating Test No.:		N10-1							
A P P L I C A N T	E V E N T T Y P E	Scenarios															
		N010-1-2			N010-1-3			N10-1-1			N10-1-4 (Spare)			T O T A L	M I N I M U M (*)		
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N				R	I	U
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P				
RO-2	RX					1								1	1	1	0
	NOR			4										1	1	1	1
	I/C			1,6		2,3								4	4	4	2
	MAJ			7		7								2	2	2	1
	TS													0	0	2	2
RO-4	RX					1								1	1	1	0
	NOR			4										1	1	1	1
	I/C			1,6		2,3								4	4	4	2
	MAJ			7		7								2	2	2	1
	TS													0	0	2	2
RO-5	RX								6					1	1	1	0
	NOR			4			1							2	1	1	1
	I/C			1,6		5,6		3,4						6	4	4	2
	MAJ			7		7		7						3	2	2	1
	TS													0	0	2	2
RO-6	RX		4											1	1	1	0
	NOR								1					1	1	1	1
	I/C		2,5					5,6						4	4	4	2
	MAJ		7					7						2	2	2	1
	TS													0	0	2	2

Instructions:

- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must service in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility:		McGuire		Date of Exam:		8/2/10		Operating Test No.:		N10-1							
A P P L I C A N T	E V E N T T Y P E	Scenarios											T O T A L	M I N I M U M (*)			
		N010-1-2			N010-1-3			N10-1-1			N10-1-4 (Spare)			R	I	U	
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N						
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C		B O P			
RO-7	RX		4										1	1	1	0	
	NOR					1							1	1	1	1	
	I/C		2,5			5,6							4	4	4	2	
	MAJ		7			7							2	2	2	1	
	TS												0	0	2	2	
	RX													1	1	0	
	NOR													1	1	1	
	I/C													4	4	2	
	MAJ													2	2	1	
	TS													0	2	2	
	RX													1	1	0	
	NOR													1	1	1	
	I/C													4	4	2	
	MAJ													2	2	1	
	TS													0	2	2	

Instructions:

- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must service in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.d) but must be significant per Section C.2.a of Appendix D. (*) Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a 1-for-1 basis.
- Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirements specified for the applicant's license level in the right-hand columns.

Facility: McGuire		Date of Examination: 8/2/10				Operating Test No.: N10-1							
Competencies	APPLICANTS												
	SRO (U/I)				RO/ATC				BOP				
	SCENARIO				SCENARIO				SCENARIO				
	1	2	3	4	1	2	3	4	1	2	3	4	
Interpret/Diagnose Events and Conditions	1-9	1-8	1-8	1-8	2,3,4,5,6,7	2,4,5,6,7,8	1,2,3,4,7,8	1,2,4,6,7,8	1,2,5,6,7,8,9	1,4,6,7	1,4,5,6,7	1,3,5,6	
Comply With and Use Procedures (1)	1-9	1-8	1-8	1-8	3,4,5,6,7	2,4,5,6,7,8	1,2,3,7,8	1,2,4,6,7,8	1,5,6,7,8,9	1,4,6,7	1,5,6,7	1,3,5,6	
Operate Control Boards (2)	NA	NA	NA	NA	3,4,5,6,7	2,4,5,6,7,8	1,2,3,7,8	1,2,4,6,7,8	1,5,6,7,8,9	1,4,6,7	1,5,6,7	1,3,5,6	
Communicate and Interact	1-9	1-8	1-8	1-8	1-9	1-8	1-8	1-8	1-9	1-8	1-8	1-8	
Demonstrate Supervisory Ability (3)	1-9	1-8	1-8	1-8	NA	NA	NA	NA	NA	NA	NA	NA	
Comply With and Use Tech. Specs. (3)	2,3,5	2,3	4,5	3,4	NA	NA	NA	NA	NA	NA	NA	NA	
Notes:													
(1) Includes Technical Specification compliance for RO.													
(2) Optional for an SRO-U.													
(3) Only applicable to SROs.													

Instructions:

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

Facility Name: McGuire Nuclear Station														Date of Exam: 8/13/10					
Tier	Group	RO K/A Category Points											SRO-Only Points						
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A 2	G *	Total			
1. Emergency & Abnormal Plant Evolutions	1	3	3	3	N/A			3	3	N/A			3	18	3	3	6		
	2	2	1	1	N/A			2	1	N/A			2	9	2	2	4		
	Tier Totals	5	4	4	N/A			5	4	N/A			5	27	5	5	10		
2. Plant Systems	1	3	2	3	3	2	3	2	3	2	3	2	28	3	2	5			
	2	1	1	1	2	1	1	0	1	1	0	1	10	0	2	1	3		
	Tier Totals	4	3	4	5	3	4	2	4	3	3	3	38	5	3	8			
3. Generic Knowledge and Abilities Categories						1	2	3	4					10	1	2	3	4	7
						2	2	3	3						2	2	2	1	

Note: 1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).

2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.

3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.

5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.

6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.

7.* The generic (G) 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.

8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.

9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

ES-401		PWR Examination Outline						Form ES-401-2		
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
39	000007 Reactor Trip - Stabilization - Recovery / 1			0 1				Actions contained in EOP for reactor trip	4	1
40	000008 Pressurizer Vapor Space Accident / 3	0 1						Thermodynamics and flow characteristics of open or leaking valves	3.2	1
41	000009 Small Break LOCA / 3		0 3					S/Gs	3	1
	000011 Large Break LOCA / 3									0
	000015 RCP Malfunctions / 4									1
42	000017 RCP Malfunctions (Loss of RC Flow) / 4						01. 32	Ability to explain and apply all system limits and precautions.	3.4	
43	000022 Loss of Rx Coolant Makeup / 2				0 9			RCP seal flows, temperatures, pressures, and vibrations	3.2	1
44	000025 Loss of RHR System / 4				1 2			RCS temperature indicators	3.6	1
	000026 Loss of Component Cooling Water / 8									0
45	000027 Pressurizer Pressure Control System Malfunction / 3		0 3					Controllers and positioners	2.6	1
	000029 ATWS / 1									0
	000038 Steam Gen. Tube Rupture / 3									0
46	000040 Steam Line Rupture - Excessive Heat Transfer / 4					0 3		Difference between steam line rupture and LOCA	4.6	1
	WE12 Uncontrolled Depressurization of all Steam Generators / 4									
47	000054 (CE/E06) Loss of Main Feedwater / 4	0 2						Effects of feedwater introduction on dry S/G	3.6	1
48	000055 Station Blackout / 6					0 1		Existing valve positioning on a loss of instrument air system	3.4	1
49	000056 Loss of Off-site Power / 6					5 0		That load and VAR limits, alarm setpoints, frequency and voltage limits for ED/Gs are not being exceeded	2.8	1
53	000077 Generator Voltage and Grid Disturbances (Had to add this to the program because it is older rev)		0 3					Sensors, Detectors, indicators.....	3	1
50	000058 Loss of DC Power / 6						01. 27	Knowledge of system purpose and or function.	2.8	1
51	000062 Loss of Nuclear Svc Water / 4			0 4				Effect on the nuclear service water discharge flow header of a loss of CCW	3.5	1
52	000065 Loss of Instrument Air / 8						04. 20	Knowledge of operational implications of EOP warnings, cautions, and notes.	3.3	1
54	W/E04 LOCA Outside Containment / 3	0 3						Annunciators and conditions indicating signals, and remedial actions associated with the LOCA Outside Containment	3.5	1
56	W/E11 Loss of Emergency Coolant Recirc. / 4				0 1			Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features	3.9	1
55	BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4			0 2				Normal, abnormal and emergency operating procedures associated with Loss of Secondary Heat Sink	3.7	1
K/A Category Totals:		3	3	3	3	3	3	Group Point Total:		18

ES-401		PWR Examination Outline							Form ES-401-2	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
	000001 Continuous Rod Withdrawal / 1									0
	000003 Dropped Control Rod / 1									0
	000005 Inoperable/Stuck Control Rod / 1									0
57	000024 Emergency Boration / 1		04					Pumps	2.6	1
58	000028 Pressurizer Level Malfunction / 2	01						PZR reference leak abnormalities	2.8	1
59	000032 Loss of Source Range NI / 7						01. 27	Knowledge of system purpose and or function.	2.8	1
60	000033 Loss of Intermediate Range NI / 7				03			Manual restoration of power	3	1
	000036 Fuel Handling Accident / 8									0
	000037 Steam Generator Tube Leak / 3									0
	000051 Loss of Condenser Vacuum / 4									0
61	000059 Accidental Liquid RadWaste Rel. / 9	01						Types of radiation, their units of intensity and the location of the sources of radiation in a nuclear power plant	2.7	1
	000060 Accidental Gaseous Radwaste Rel. / 9									0
	000061 ARM System Alarms / 7									0
	000067 Plant Fire On-site / 8									0
62	000068 Control Room Evac. / 8				01			S/G atmospheric relief valve	4.3	1
63	000069 Loss of CTMT Integrity / 5						04. 50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	3.3	1
	W/E14 High Containment Pressure / 5									
64	000074 Inad. Core Cooling / 4					01		Subcooling Margin	4.6	1
	W/E06 Degraded Core Cooling / 4									
	W/E07 Saturated Core Cooling / 4									
	000076 High Reactor Coolant Activity / 9									0
	W/E01 Rediagnosis / 3									0
	W/E02 SI Termination / 3									0
	W/E13 Steam Generator Over-pressure / 4									0
	W/E15 Containment Flooding / 5									0
	W/E16 High Containment Radiation / 9									0
	W/E03 LOCA Cooldown - Depress. / 4									0
65	W/E09 Natural Circulation Operations / 4			01				Facility operating characteristics during transient conditions, including coolant chemistry and the effects of temperature.	3.3	1
	W/E10 Natural Circulation with Steam Voide in Vessel with/without RVLIS. / 4									0
	W/E08 RCS Overcooling - PTS / 4									0
K/A Category Totals:		2	1	1	2	1	2	Group Point Total:		9

ES-401		PWR Examination Outline											Form ES-401-2		
Plant Systems - Tier 2/Group 1 (RO)															
Q#	System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
1	003 Reactor Coolant Pump					0 1							The relationship between the RCPS flow rate and the nuclear reactor core operating parameters (quadrant power tilt, imbalance, DNB rate, local power density, difference in	3.3	1
2	004 Chemical and Volume Control						0 2						Demineralizers and ion exchangers	2.5	1
3,4	005 Residual Heat Removal			0 1				0 2					RCS; RHR flow rate	3.9; 3.3	2
5,6	006 Emergency Core Cooling	1 4					0 2						IAS; Core flood tanks (accumulators)	3; 3.4	2
7	007 Pressurizer Relief/Quench Tank					0 2							Method of forming a steam bubble in the PZR	3.1	1
8	008 Component Cooling Water			0 2									Operation of the surge tank, including the associated valves and controls	2.9	1
9	010 Pressurizer Pressure Control						0 7						RCS pressure	3.7	1
10	012 Reactor Protection							0 2					Loss of instrument power	3.6	1
11	013 Engineered Safety Features Actuation		0 1										ESFAS/safeguards equipment control	3.6	1
12,13	022 Containment Cooling	0 1										04. 45	SWS/cooling system; Ability to prioritize and interpret the significance of each annunciator or alarm.	3.5; 3.3	2
15	025 Ice Condenser						0 1						Upper and lower doors of the ice condenser	3.4	1
16	026 Containment Spray							0 9					Radiation hazard potential of BWST	2.5	1
17	039 Main and Reheat Steam				0 5								Automatic isolation of steam line	3.7	1
14,18	059 Main Feedwater							0 6				04. 31	Loss of steam flow to MFW system; Knowledge of annunciators alarms and indications, and use of the response instructions.	2.7; 3.3	2
19	061 Auxiliary/Emergency Feedwater		0 1										AFW system MOVs	3.2	1
20	062 AC Electrical Distribution									0 5			Safety-related indicators and controls	3.5	1
21,22	063 DC Electrical Distribution				0 1					0 1			Manual/automatic transfers of control, Meters, annunciators, dials, recorders, and indicating lights	2.7; 2.7	2
23	064 Emergency Diesel Generator										0 8		Opening of the ring bus	3.2	1
24	073 Process Radiation Monitoring	0 1											Those systems served by PRMs	3.6	1
25	076 Service Water			0 7									ESF loads	3.7	1
26,27	078 Instrument Air			0 2							0 1		Systems having pneumatic valves and controls; Pressure gauges	3.4; 3.1	2
28	103 Containment										0 4		Phase A and phase B resets	3.5	1
K/A Category Totals:		3	2	3	3	2	3	2	3	2	3	2	Group Point Total:	28	

ES-401		PWR Examination Outline											Form ES-401-2		
Plant Systems - Tier 2/Group 2 (RO)															
Q#	System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
29	001 Control Rod Drive							1 3					Location and operation of RPIS	3.6	1
	002 Reactor Coolant														0
30	011 Pressurizer Level Control			0 2									RCS	3.5	1
31	014 Rod Position Indication											04. 31	Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
32	015 Nuclear Instrumentation		0 1										NIS channels, components, and interconnections	3.3	1
33	016 Non-nuclear Instrumentation				0 1								Reading of NNIS channel values outside control room	2.8	1
	017 In-core Temperature Monitor														0
	027 Containment Iodine Removal														0
34	028 Hydrogen Recombiner and Purge Control							0 1					Hydrogen recombinder power setting, determined by using plant data book	3.4	1
	029 Containment Purge														0
35	033 Spent Fuel Pool Cooling								0 2				Spent fuel leak or rupture	2.9	1
	034 Fuel Handling Equipment														0
36	035 Steam Generator	0 1											MFW/AFW systems	4.2	1
	041 Steam Dump/Turbine Bypass Control														0
37	045 Main Turbine Generator					2 3							Relationship between rod control and RCS boron concentration during T/G load increases	2.7	1
	055 Condenser Air Removal														0
	056 Condensate														0
	068 Liquid Radwaste														0
38	071 Waste Gas Disposal				0 6								Sampling and monitoring of waste gas release tanks	2.7	1
	072 Area Radiation Monitoring														0
	075 Circulating Water														0
	079 Station Air														0
	086 Fire Protection														0
K/A Category Totals:		1	1	1	2	1	1	0	1	1	0	1	Group Point Total:	10	

ES-401	PWR Examination Outline							Form ES-401-2		
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (SRO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
	000007 Reactor Trip - Stabilization - Recovery / 1									0
	000008 Pressurizer Vapor Space Accident / 3									0
	000009 Small Break LOCA / 3									0
	000011 Large Break LOCA / 3									0
84	000015 RCP Malfunctions / 4					0 2		Abnormalities in RCP air vent flow paths and/or oil cooling system	3	1
	000017 RCP Malfunctions (Loss of RC Flow) / 4									
85	000022 Loss of Rx Coolant Makeup / 2						04. 46	Ability to verify that the alarms are consistent with the plant conditions.	3.6	1
	000025 Loss of RHR System / 4									0
	000026 Loss of Component Cooling Water / 8									0
86	000027 Pressurizer Pressure Control System Malfunction / 3					1 0		PZR heater energized/de-energized condition	3.6	1
	000029 ATWS / 1									0
87	000038 Steam Gen. Tube Rupture / 3						04. 11	Knowledge of abnormal condition procedures.	3.6	1
	000040 Steam Line Rupture - Excessive Heat Transfer / 4									0
	WE12 Uncontrolled Depressurization of all Steam Generators / 4									0
	000054 (CE/E06) Loss of Main Feedwater / 4									0
	000055 Station Blackout / 6									0
	000056 Loss of Off-site Power / 6									0
	000057 Loss of Vital AC Inst. Bus / 6									0
88	000058 Loss of DC Power / 6					0 2		125V dc bus voltage, low/critical low, alarm	3.6	1
89	000062 Loss of Nuclear Svc Water / 4						04. 47	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	3.7	1
	000065 Loss of Instrument Air / 8									0
	WE04 LOCA Outside Containment / 3									0
	WE11 Loss of Emergency Coolant Recirc. / 4									0
	BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4									0
K/A Category Totals:		0	0	0	0	3	3	Group Point Total:		6

ES-401		PWR Examination Outline							Form ES-401-2	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (SRO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
	000001 Continuous Rod Withdrawal / 1									0
90	000003 Dropped Control Rod / 1					02		Signal inputs to rod control system	2.8	1
	000005 Inoperable/Stuck Control Rod / 1									0
	000024 Emergency Boration / 1									0
	000028 Pressurizer Level Malfunction / 2									0
	000032 Loss of Source Range NI / 7									0
	000033 Loss of Intermediate Range NI / 7									0
	000036 Fuel Handling Accident / 8									0
	000037 Steam Generator Tube Leak / 3									0
	000051 Loss of Condenser Vacuum / 4									0
	000059 Accidental Liquid RadWaste Rel. / 9									0
	000060 Accidental Gaseous Radwaste Rel. / 9									0
	000061 ARM System Alarms / 7									0
	000067 Plant Fire On-site / 8									0
	000068 Control Room Evac. / 8									0
91	000069 Loss of CTMT Integrity / 5					02		Verification of automatic and manual means of restoring integrity	4.4	1
	W/E14 High Containment Pressure / 5									
	000074 Inad. Core Cooling / 4									0
	W/E06 Degraded Core Cooling / 4									
	W/E07 Saturated Core Cooling / 4									
92	000076 High Reactor Coolant Activity / 9						04. 11	Knowledge of abnormal condition procedures.	3.6	1
	W/E01 Rediagnosis / 3									0
	W/E02 SI Termination / 3									
	W/E13 Steam Generator Over-pressure / 4									0
	W/E15 Containment Flooding / 5									0
	W/E16 High Containment Radiation / 9									0
93	W/E03 LOCA Cooldown - Depress. / 4						04. 46	Ability to verify that the alarms are consistent with the plant conditions.	3.6	1
	W/E09 Natural Circulation Operations / 4									0
	W/E10 Natural Circulation with Steam Voide in Vessel with/without RVLIS. / 4									
	W/E08 RCS Overcooling - PTS / 4									0
K/A Category Totals:		0	0	0	0	2	2	Group Point Total:		4

ES-401		PWR Examination Outline Plant Systems - Tier 2/Group 1 (SRO)											Form ES-401-2			
Q#	System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#	
76	003 Reactor Coolant Pump												01. 20	Knowledge of the purpose and function of major system components and controls.	4.1	1
	004 Chemical and Volume Control															0
77	005 Residual Heat Removal								0 2					Pressure transient protection during cold shutdown	3.7	1
	006 Emergency Core Cooling															0
	007 Pressurizer Relief/Quench Tank															0
	008 Component Cooling Water															0
	010 Pressurizer Pressure Control															0
	012 Reactor Protection															0
	013 Engineered Safety Features Actuation															0
	022 Containment Cooling															0
	025 Ice Condenser															0
	026 Containment Spray															0
	039 Main and Reheat Steam															0
	059 Main Feedwater															0
78	061 Auxiliary/Emergency Feedwater								0 6					Back leakage of MFW	3	1
	062 AC Electrical Distribution															0
	063 DC Electrical Distribution															0
	064 Emergency Diesel Generator															0
	073 Process Radiation Monitoring															0
79	076 Service Water								0 1					Loss of SWS	3.7	1
80	078 Instrument Air												01. 20	Knowledge of system purpose and/or function.	4	1
	103 Containment															0
K/A Category Totals:		0	0	0	0	0	0	0	3	0	0	2	Group Point Total:		5	

ES-401		PWR Examination Outline											Form ES-401-2		
		Plant Systems - Tier 2/Group 2 (SRO)													
Q#	System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
	001 Control Rod Drive														0
83	002 Reactor Coolant								02				Loss of coolant pressure	4.4	1
	011 Pressurizer Level Control														0
	014 Rod Position Indication														0
81	015 Nuclear Instrumentation								01				Power supply loss or erratic operation	3.9	1
	016 Non-nuclear Instrumentation														0
	017 In-core Temperature Monitor														0
82	027 Containment Iodine Removal											04, 11	Knowledge of abnormal condition procedures.	3.6	1
	028 Hydrogen Recombiner and Purge Control														0
	029 Containment Purge														0
	033 Spent Fuel Pool Cooling														0
	034 Fuel Handling Equipment														0
	035 Steam Generator														0
	041 Steam Dump/Turbine Bypass Control														0
	045 Main Turbine Generator														0
	055 Condenser Air Removal														0
	056 Condensate														0
	068 Liquid Radwaste														0
	071 Waste Gas Disposal														0
	072 Area Radiation Monitoring														0
	075 Circulating Water														0
	079 Station Air														0
	086 Fire Protection														0
K/A Category Totals:		0	0	0	0	0	0	0	2	0	0	1	Group Point Total:		3

ES-401		Generic Knowledge and Abilities Outline (Tier 3)				Form ES-401-3	
Facility Name: McGuire Nuclear Station		Date of Exam: 8/13/10					
Q#	Category	K/A #	Topic	RO		SRO-Only	
				IR	#	IR	#
66	1. Conduct of Operations	2.1. 25	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.	2.8	1		
67		2.1. 26	Knowledge of industrial safety procedures (such as rotating equipment, electrical, high temperature, high pressure, caustic, chlorine, oxygen and	3.4	1		
94		2.1. 04	Knowledge of shift staffing requirements.			3.4	1
95		2.1. 08	Ability to coordinate personnel activities outside the control room.			3.6	1
		2.1.					
		2.1.					
		Subtotal			2		2
68	2. Equipment Control	2.2. 25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.2	1		
69		2.2. 42	Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9	1		
96		2.2. 40	Ability to apply Technical Specifications for a system.			4.7	1
97		2.2. 06	Knowledge of the process for making changes in procedures as described in the safety analysis report.			3.6	1
		2.2.					
		2.2.					
		Subtotal			2		2
70	3. Radiation Control	2.3. 14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.	3.4	1		
71		2.3. 05	Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	2.9	1		
72		2.3. 07	Ability to comply with radiation work permit requirements during normal or abnormal conditions.	3.5	1		
98		2.3. 12	Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities,			3.7	1
99		2.3. 14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.			3.8	1
		2.3.					
		Subtotal			3		2
73	4. Emergency Procedures / Plan	2.4. 17	Knowledge of EOP terms and definitions.	3.9	1		
74		2.4. 39	Knowledge of the RO's responsibilities in emergency plan implementation.	3.9	1		
75		2.4. 50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	4.2	1		
100		2.4. 40	Knowledge of the SRO's responsibilities in emergency plan implementation.			4	1
		2.4.					
		2.4.					
		Subtotal			3		1
Tier 3 Point Total					10		7

Paper saver

KA

Paper Saver

Final

Tier / Group	Randomly Selected KA	Reason for Rejection
2 / 1	SYS008 K4.07	(Q8) Rejected KA due to no "swing bus". Replacement KA (SYS008K4.02) provided by Lead Examiner. 02/19/10
2 / 1	SYS022 2.4.47	Q(12) Rejected K/A due to no reference material associated with the Containment Cooling System in the MNS data Book. New K/A SYS022 2.4.45 randomly selected by Lead Examiner 2/19/10
2 / 1	SYS025 A2.06	Q(14) Rejected K/A because it is not possible to develop a discriminating question concerning decreasing Ice condenser temperature. New K/A (SYS059 A2.06) randomly selected by Lead Examiner. 2/19/10
2 / 1	SYS078 K3.03	Q(27) Rejected K/A because it is not possible to develop a discriminating question concerning IAS and cross tied units. This configuration is static and there is nothing to test. New K/A (SYS078 K3.02) randomly selected by Lead Examiner. 2/19/10
2 / 2	SYS014 2.4.35	Q(31) Rejected K/A because there are no local auxiliary operator tasks associated with RPIS. New K/A (SYS014 GEN 2.4.31) randomly selected by Lead Examiner. 2/19/10
2 / 2	SYS033 A3.02	Q(35) Rejected KA due to impossible to meet at MNS as there are not auto actions for KF (except Sequencer). New KA (SYS033A1.02) randomly selected by Lead Examiner. (03/24/10)
2 / 2	SYS033 A3.01	Q(35) Rejected K/A because it is not possible to develop a discriminating question concerning SPCS Temperature Control Valves. These valves are manual and are rarely manipulated. New K/A (SYS033 A3.02) randomly selected by Lead Examiner. 2/19/10
2 / 2	SYS071 A4.07	Q(38) Rejected K/A because at MNS operations does not operate the WG equipment therefore an ability K/A (A4) associated with WG release flow meter is not appropriate for this exam. New K/A (SYS071 K4.06) randomly selected by Lead Examiner. 2/19/10
1 / 1	APE026 AA1.04	Q(44) Rejected KA due to no CRDM Hi Temp Alarm system at MNS. New KA (APE025AA1.12) provided by Lead Examiner. 02/19/10
1 / 1	APE058 2.1.25	Q(50) Rejected KA due to no reference materials for DC Power. New KA (058G2.1.27) provided by Lead Examiner. 02/19/10
3 / 0	GEN2.3 2.3.6	Q(72) Rejected K/A because the ability to approve release permits is an SRO task and therefore not appropriate for the RO exam. New K/A (Gen 2.3.7) randomly selected by Lead Examiner. 2/19/10
3 / 0	GEN2.4 2.4.38	Q(74) Rejected K/A because the original K/A was not appropriate for the RO exam. New K/A (Gen 2.4.39) randomly selected by Lead Examiner. 2/19/10
2 / 1	SYS003 2.1.28	Q(76) Rejected KA. Not possible to meet at SRO level. New KA (SYS003G2.1.20) randomly selected by Lead Examiner (03/24/10)
2 / 1	SYS061 A2.08	Q(78) KA rejected due to inability to write SRO level question. New KA (SYS061A2.06) randomly selected by Lead Examiner. (HCF 03/17/10)
2 / 1	SYS078 2.1.27	Q(80) Rejected KA. Not possible to meet at SRO level. New KA (SYS063G2.1.23) randomly selected by Lead Examiner. (03/24/10)
2 / 1	SYS078 2.1.25	Q(80) Rejected K/A because there are no graphs, curves or tables associated with the IAS in the MNS Data Book. New K/A (SYS078 GEN 2.1.27) randomly selected by Lead Examiner. 2/19/10
2 / 2	SYS027 2.1.32	Q(82) KA rejected due to inability to write SRO level question. New KA (SYS027 G2.4.11) randomly selected by Lead Examiner. (HCF 03/17/10)
2 / 2	SYS027 2.4.11	Q(82) Rejected KA. Not possible to meet any CIRS KA at the SRO level. New KA (SYS041G2.4.11) randomly selected by Lead Examiner. (03/24/10)

Facility: **McGuire Nuclear Station** Date of Exam: **8/2/2010** Exam Level: RO SRO

Item Description	Initial		
	a	b*	c*
1. Questions and answers are technically accurate and applicable to the facility.	OK	OK	OK
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	OK	OK	OK
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	OK	OK	OK
4. The sampling process was random and systematic (If more than 4 RO or 2 SRO questions were repeated from the last 2 NRC licensing exams, consult the NRR OL program office).	OK	OK	OK
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: ___ the audit exam was systematically and randomly developed; or ___ the audit exam was completed before the license exam was started; or ___ the examinations were developed independently; or ___ the licensee certifies that there is no duplication; or ___ other (explain)	OK	OK	OK
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
	33 / 9	2 / 0	40 / 16
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	
	32 / 11	43 / 14	
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	OK	OK	OK
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.	OK	OK	OK
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	OK	OK	OK
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.	OK	OK	OK

	Printed Name / Signature	Date
a. Author	<u>H. Clark Fletcher / H. Clark Fletcher</u>	<u>07/14/10</u>
b. Facility Reviewer (*)	<u>Fred B Kirk / Fred B Kirk</u>	<u>7/15/10</u>
c. NRC Chief Examiner (#)	<u>RON ARHOE</u>	<u>7/26/10</u>
d. NRC Regional Supervisor	<u>MALCOLM T. WIDUWAN</u>	<u>07/27/10</u>

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.

McGuire 2010-301

FINAL

Q#	1. LOK (C/A)	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			
<p>Instructions</p> <p>[Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts.]</p> <ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. One or more distractors 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: <ul style="list-style-type: none"> 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. <u>Check questions that are sampled</u> for conformance with the approved K/A and those that are <u>designated SRO-only</u> (K/A and license level mismatches are unacceptable). 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? At a minimum, explain any "U" ratings (e.g., how the Appendix B psychometric attributes are not being met). <p style="text-align: center;">RO/SRO Combined Question</p>																
<p>Generic:</p> <p>Many of the questions do NOT have the System KA defined)e.g. SYS003G2.1.20 (Q 76), SYS0063G2.1.23 (Q 80), SYS041G2.4.11 (Q 82, etc)</p> <p>U* = Unsat but one or two words would fix.</p> <p>NP = Not Plausible</p> <p>Check all stems to make sure the word "should" is NOT used. Words like Shall, must, will are the proper words.</p>																
1	C	3											Y	N	S	003K5.01 No comment 05/16/10
2	M	2											Y	N	S	004K6.02 No comment 05/16/10

Q#	1. LOK (C/A)	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			
3	M	2											Y	N	S	005A1.02 No comment 05/16/10
4	C	3											Y	N	S	005K3.01 No comment 05/16/10
5	M	2					X						Y	N	E	006K1.14 Distractors A and C: Change "align VI to" "Maintain it's alignment" because some of the modulating valves do not reposition in the event of a loss of VI. This will lend the 2 nd part of distractors A and C more plausible. 05/16/10 Changed "align VI to" to "maintain VI aligned to" in proposed revision of question. 05/31/10 Approved revised question. RFA 06/07/10
6	M	2				X							Y	N	U	006K6.02 Change A to '1B' ONLY is inoperable Change B to '1C' ONLY is inoperable All or None are poor distractors and rarely picked if applicant is not sure. 1B and 1C have the lowest pressure and level respectively. Delete (if at all) from the stem This Q is U because there are 2 NP distractors 05/17/10 Changed question per Lead Examiner's recommendation. 05/31/10 Approved revised question. RFA 06/07/10
7	M	2											Y	N	S	007K5.02 No comment 05/17/10
8	M	2											Y	N	S	008K4.02 No comment 05/17/10
9	C	3											Y	N	S	010A1.07 No comment 05/17/10
10	M	2				X							Y	N	U	012A2.02 Change "what" to "Which" in the WOOTF statement. Please verify that "B" is in fact not a correct answer in and of

Q#	1. LOK (C/A)	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			
															E	<p>itself. I suggest that "B" be replaced just to remove all doubt based on "B" distractor analysis.</p> <p>This Q is a U based on possible 2 correct answers. FAC re-verify. If B is found to be acceptable, U will become an S.</p> <p>Answer "B" cannot be a correct answer. A reactor trip WILL occur for the conditions given and the correct procedure flowpath is to transition to E-0. Changed "what" to "which" in the stem per Lead Examiner's recommendation. 05/31/10</p> <p>Confirmed "B" as an incorrect answers. Changed from U to E. Question approved. RFA 06/07/10</p>
11	M	2											Y	N	S	<p>013K2.01</p> <p>No comment</p> <p>05/17/10</p>
12	M	2											Y	N	S	<p>022G2.4.45</p> <p>No comment</p> <p>05/17/10</p>
13	C	3	X			X							Y	N	U	<p>022K1.01</p> <p>I believe that it is common knowledge that Containment isolation occurs on a phase B isolation. I believe that distractors A and B are NP. Consider replacing or modifying or putting something in the stem to give them false credibility.</p> <p>This Q is U due to potentially 2 NP distractors, '05/17/10</p> <p>In this particular case, it is true that the RV Containment isolation valves close on a Phase B isolation. However, the majority of all Containment Isolation valves close on a Phase A signal. Therefore, it is plausible for the applicant to conclude that the RV Containment isolation valves would close on a Phase A signal (ST) or on a Safety Injection (SS) signal which causes a Phase A signal.</p> <p>05/31/10</p> <p>Change stem of question to be 2.8 PSIG instead of 1 PSIG. Will allow this if one of the remaining validators picks "A" or "B" or if the miss rate is 50% or higher. If this criteria is not met will need to pick a new question. If the criteria is met change question from a U to an E. RFA 06/07/10</p>
14	C	3											Y	N	S	<p>059A2.06</p> <p>No comment</p> <p>05/17/10</p>

Q#	1. LOK (C/A)	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			
15	C	3											Y	N	S	025K6.01 No comment 05/17/10
16	C	3											Y*	N	E	026A2.09 A procedure of reference needs to be in affect to satisfy Part 2 of the KA Suggestion: Add a procedure to part two of the stem: "What alignment per procedure XXXX would be required ..." 05/17/10 Added procedure reference to question 2 of the stem. 05/31/10 Approved revised question. RFA 06/07/10
17	C	3					X						Y	N	E	039K4.05 In C and D: add "be" between must and reduced. C is a subset of D. If C was correct, D would be also. C needs an "only". 05/19/10 Added "be" in distracters C and D and ONLY at the end of distracter C as recommended by Lead Examiner. 05/31/10 Approved revised question. RFA 06/07/10
18	C	3					X						Y	N	E	059G2.4.31 In distractor C: add "the" before Loss. Change "cannot" to "can NOT" 05/19/10 Changed question per Lead Examiner's recommendation. Distracter A needed a "the" before Loss also. 05/31/10 Approved revised question. RFA 06/07/10
19	M	2											Y	N	S	061K2.01 No comment 05/19/10
20	M	2											Y	N	S	062A3.05 No comment

Q#	1. LOK (C/A)	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		
															05/19/10 Revisited this question due to high miss rate during validation. Chose replacement question. Approved replacement question. RFA 07/06/10
21	M	2					X						Y	N	U S 063A3.01 C and D are NP. I disagree with distractor analysis for C1 and D1. In order to give C1 and D1 plausibility, you will have to significantly increase the loss of AC down time to almost battery exhaustion (within minutes). This Q is U because C and D are NP 05/20/10 Believe that "C" and "D" are plausible. We had one validator that picked "C". When asked why they picked "C" they commented that they had mistakenly concluded that "1" was asking for the status of the 125VDC Battery Charger instead of the Distribution Center. 05/31/10 Accepted response. Question accepted "as is". Changed U to S. RFA 06/07/10.
22	C	3											Y	N	S 063K4.01 No comment 05/20/10
23	M	2					X						Y	N	E 064A4.08 An SI has not occurred. In order to give "starting the EDG in priority mode" some credibility, can you state in another bullet that "SI has NOT been reset" (because one has not occurred but the applicant will have to figure that out)? This will lend B2 and C2 additional credibility or put something in the stem that might indicate an SI might have occurred but didn't. This Q is E because of 2 weak distractors.. 05/20/10 Don't feel that there's a way to add the SI angle and maintain plausibility. Actually, two validators have picked B. Wrote a potential replacement question that asks the applicant to differentiate between the Committed and Accelerated Sequences. 05/31/10

Q#	1. LOK (C/A)	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			
28	M	2	X					X					Y	N	E	<p>Since Phase B is actuated (3.5 psig), it would appear that the KC valves are closed as stated. The distractor analysis for D appears to indicate that Contmt pressure must be reduced to < 3 psig before phase B can be reset (because phase A is still in). In other words can one reset phase B without phase A being reset? Please re-verify this because the reference was not clear on this issue.</p> <p>This Q is E until re-verified. 05/20/10</p> <p>Phase A does not have to be reset in order to reset Phase B. And, Phase B can be reset with containment pressure greater than 3.0 psig. The wording in distracter D analysis is incorrect. Instead of "prevent resetting the Phase A signal unless Containment pressure is reduced" is should have said "prevent resetting the Phase B signal unless Containment pressure is reduced". Changed analysis for distracter D accordingly. 05/31/10</p> <p>Approved. RFA 06/07/10</p>
29	M	2	X					X					Y	N	E	<p>001K6.13</p> <p>B is NP as written. Place in the stem "what is the FIRST action..." and remove "and do not move them" from distractor B.</p> <p>E because distractor B is NP as written. 05/20/10</p> <p>Revised question per Lead Examiner's recommendation. Then rearranged distracters "A" and "B" for psychometrics making "B" the new correct answer. If this is acceptable the distracter analysis will need to be reworked. 05/31/10</p> <p>Approved revised question. RFA 06/07/10</p>
30	C	3						X					Y	N	E	<p>011K3.02</p> <p>Consider Modifying Q to a fill in the blank. It will read better. Pressurizer level is ____ and pressurizer heaters are ____.</p> <p>Is there enough information for the applicant to calc whether or not heaters are on or off? Facility re-confirm. 05/20/10</p> <p>Re-wrote question to be fill in the blank. The applicant does not need to calculate whether the heaters are on or off. With charging flow reduced to less than 20 GPM for 20 sec., letdown is automatically isolated and the heaters are</p>

Q#	1. LOK (C/A)	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		
															<p>automatically secured. 05/31/10</p> <p>Removed "Assume no other operator actions have been taken" from stem. Revised question approved. RFA 06/07/10</p> <p>Revisited question due to high miss rate. Changed 8 GPM to 18 GPM to be more operationally valid.</p> <p>Approved revised question. RFA 07/06/10</p>
31	C	3					X					Y	N	E	<p>014G2.4.31</p> <p>I think the answer is obvious as written. Can you reduce the stem indications to make it less obvious? "D" is NP because of the 3rd bullet (Red "RB" is indicated for rod D-4") Replace D 05/20/10</p> <p>Revised question and removed third bullet. Didn't really see how we could replace "D" with anything that was more plausible. Removing third bullet gives "D" plausibility. 05/31/10</p> <p>Approved revised question. RFA 06/07/10</p>
32	M	2										Y	N	S	<p>015K2.01</p> <p>No comment 05/20/10</p>
33	M	1+										Y	N	E	<p>016K4.01</p> <p>Consider adding an additional indication to increase LOD. A,A (none good) A,B (B good only) B,B (All good) B,A (B good only) 05/20/10</p> <p>Developed a revised question with two answers per distracter. If revised question is used the distracter analysis will need to be revised. 05/31/10</p> <p>Approved revised question. RFA 06/07/10</p>

Q#	1. LOK (C/A)	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			
34	C	3											Y	N	S	028A2.01 No comment 05/20/10! Replaced "should" with "will" in stem of question based on Lead Examiner's General Comments. 05/31/10
35	C	3				X							Y	N	U E	033A1.02 The distractor analysis said 1EMF-42 will have little to no effect. If "A" is marginally correct then it can be arguably correct. Therefore, 2 potentially correct answers exist. This must be re-evaluated. This Q is U until resolved due to 2 possible correct answers. 05/20/10! The discussion should have stated that 1EMF-42 will have "no effect" instead of "little to no effect". This event would be dealt with via entry into AP-41 (Loss of Spent Fuel Pool Cooling or Level). An alarm on 1EMF-17 is one of the symptoms that prompts entry into AP-41. There is plausibility for 1EMF-42 in that an alarm on this monitor would prompt entry into AP-25 (Spent Fuel Damage). However, 1EMF-42 is a beta gas monitor and will only respond if there is damage to the fuel in the SFP. Revised the discussion and distractor analysis for A2 and C2. 05/31/10 Accepted revised analysis. Changed question from U to E. RFA 06/07/10
36	C	3											Y	N	S	035K1.01 No comment 05/20/10!
37	C	3	X				X						Y	N	E	045K5.23 Of the 4 bullets: I think you can delete all but the second bullet. In Stem 1. add "at 3% per hr" In C1 and D1 state "Control rod withdrawal is restricted." In A1 and B1 cap the word "NOT" Change B2 and D2 to "No dilution will be required because Xenon burnout will compensate for the power defect" 05/20/10!

Q#	1. LOK (C/A)	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			
															Deleted last two bullets. You need the first two bullets as a minimum. Made the rest of changes as recommended by Lead Examiner. 05/31/10 Approved revised question. RFA 06/07/10	
38	M	2					X						Y	N	U E	071K4.06 Distractors A and B are NP because there is no case where an isolation will not occur without a malfunction. Replace A and B. This Q is U because of 2 NP distractors. 05/20/10 Believe there is plausibility for "A" and "B". Will discuss. Have developed a proposed replacement question if this question is still unacceptable. 05/31/10 Revised distractor A. Rearranged distractors. Revised question approved. Changed from U to E. RFA 06/07/10
39	M?	3											Y	N	E	EPE007EK3.01 I believe this Q should be hi cog due to the fact that it involves a higher level of analysis. 05/20/10 Agree. Changed to hig cog and provided justification. 05/31/10
40	C	3											Y	N	S	APE008AK1.01 No comment 05/21/10
41	C	3	X				X						Y	N	E	EPE009EK2.03 Distractor D is NP because of the way it is written. One would not say NC pumps are not running. SGs are not required for NC system heat removal. Consider setting up A – D in a table format and ALL distractors will be plausible. 05/21/10 Not sure that I completely understood what we're looking for here. However, wrote a proposed replacement question with the answers in table format. 05/31/10 Revised question approved. RFA 06/07/10

Q#	1. LOK (C/A)	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			
42	C	3	X					X					Y	N	E	<p>APE015/017G2.1.32</p> <p>The question needs to be tightened up a bit. It is common knowledge that the max number of starts within a certain time period is 3. Suggest reducing the number of starts in the table to 2. Set the parameters and apply the restart criteria and answer D will still be good. Raise the stator T to > 248 with a cool down and this should work. 05/21/10</p> <p>Tried to rewrite this question with two starts and then requesting a third start. However, the only way to do this and still maintain plausibility you end up with three NO answers and one YES answer with the correct answer being the YES answer. It's not really plausible to make the restart time less than 30 minutes because it is common knowledge that you have to wait 30 minutes (more so than the 3 starts in two hours). Even with temperature above 248°F, as long as you've waited 30 minutes, you can attempt a third start. Given the plant conditions, you have to wait 30 minutes for the restart regardless of the motor stator conditions. 05/31/10</p> <p>Due to high validation miss rate, question stands as written. RFA 06/07/10</p> <p>Revisited question due to continued high miss rate during validation. Selected replacement question.</p> <p>Replacement question approved. RFA 07/07/10</p>
43	C	3	X										Y	N	E	<p>APE022AA1.09</p> <p>The answer choices are very difficult to read. Consider setting this Q up as a fill in the blank as follows: The #1 Seal Leak off Flow is going _____. NC Pump number 2 Seal Standpipe _____ level alarm is LIT</p> <p>A. Down Low B, Down High C, Up High D. Up Low</p> <p>05/21/10</p>

Q#	1. LOK (C/A)	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			
																Revised question per Lead Examiner's recommendation. 05/31/10 Revised question approved. RFA 06/07/10
44	M	2											Y	N	S	APE025AA1.12 NOTE: I would like to see where 212 degrees is frequently referenced just to make sure. No examples were provided. 05/21/10
45	C	3				X							Y	N	U	APE027AK2.03 Why would the applicant select 2230 psig based on this logic? I don't believe A1 and C1 are plausible. Facility please explain. This Q is U until facility explains why A1 and C1 are plausible. 05/21/10 There are better choices for plausibility. Decided to change 2230 PSIG to 2240 PSIG. Since the algorithm picks the highest median select signal it would be plausible for the applicant to pick the highest reading channel as the output to the Master Controller. 05/31/10 Approved revised question. RFA 06/07/10
46	C	3				X							Y	N	U	APE040AA2.03 It's common knowledge that power would not go up for a LOCA. Drop the first bullet and C and D will be plausible. The Q is currently a U because C and D are NP. 05/21/10 By removing power completely from the question, the applicant has no way to discriminate whether the event is a Steam Leak or a LOCA. As a compromise, removed power indication and pressurizer pressure indication bullets and added a bullet providing Rod Control system Power Mismatch (PMM). By doing this the applicant is not given power indication directly and has to interpret the Rod Control system indication to determine that Nuclear Power is increasing faster than Turbine Power which would indicate a steam leak. Also, replaced "should" with "will" in the stem of the question per Lead Examiner's General Comments. See attached file for proposed question revision. 05/31/10

Q#	1. LOK (C/A)	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			
																Approved revised question. RFA 06/07/10
47	C	3											Y	N	S	APE054AK1.02 No comment 05/21/10
48	C	3											Y	N	S	EPE055EA2.01 No comment 05/21/10
49	C	3											Y	N	S	APE056AA2.50 No comment 05/21/10
50	M	2											Y	N	S	APE058G2.1.27 No comment 05/21/10
51	C	3					X						Y	N	E	APE062AK3.04 The second part of A needs the word "train" after RN. 05/21/10 Corrected answer A per Lead Examiner's comment. 05/31/10 Approved. RFA 06/07/10
52	M	2					X						Y	N	E	APE065G2.4.20 C is NP as written. PTS is way too a significant event for the initial conditions. Consider changing to C to "CA pump run out" 05/21/10 Developed revised question per Lead Examiner's recommendation. Rearranged distractors for psychometrics. Distractor analysis will need work if revised question is acceptable. 05/31/10 Approved revised question. RFA 06/07/10
53	C	3					X						Y	N	E	APE077AK2.03 The stem requires an action. Distractor A is NOT an action and therefore is NP. Consider using "raise" for A and B in some fashion. 05/21/10 Revised answers A and B to include "raise".

Q#/ Q#	1. LOK (C/A)	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			
															05/31/10 Added "if any" to stem and approved revised question. RFA 06/07/10	
54	C	3				X							Y	N	U	WE04EK1.3 The stem requires an action to mitigate the event. Delaying depletion of the FWST is not an action to mitigate a LOCA outside containment event. Isolating the break is ALWAYS a good thing. Distractors B2 and D2 are NP. Replace these 2 distractors. This Q is U because of 2 NP distractors. 05/21/10 Added Both ND pumps are tripped to stem of question to give plausibility to "A" and "B". Replaced "should" with "must" in the stem of the question per Lead Examiner's General Comments. 05/31/10 Approved revised question. RFA 06/07/10
55	M	2				X							Y	N	U	WE05EK3.2 A1 and B1 are borderline NP because seal leak off is so insignificant with respect to a LOCA unless the seal is blown. Consider changing both to "prevent NC pump impeller damage to low pressure operations" or something equivalent. This Q is U because of 2 NP distractors. 05/21/10 Revised per Lead Examiner's recommendation. 05/31/10 Revised question approved. RFA 06/07/10
56	M	2	X										Y	N	E	We11EA1.1 Since A and B are both actions in ECA 1.1, the WOOTF statement should include the word "FIRST" to completely rule out A and B. Facility please reevaluate. 05/21/10 Reworded stem of question to include FIRST per Lead Examiner's recommendation. 05/31/10

Q#	1. LOK (C/A)	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		
															Approved revised question. RFA 06/07/10
57	M	2	X									Y	N	E	<p>APE024AK2.04 Stems should not include a "should." I did NOT find it anywhere in the procedure. The word should be "shall" or "will" or "must" 05/21/10</p> <p>Changed "should" to "will" per Lead Examiner's recommendation. 05/31/10</p> <p>Approved revised question. RFA 06/07/10</p>
58	C	3										Y	N	S	<p>APE028AK1.01 No comment 05/21/10</p>
59	C	3										Y	N	S	<p>APE032G2.1.27 No comment 05/21/10</p>
60	M	2				X						Y	N	U	<p>The way these are written, if B is correct then A is correct. If D is correct, C would be correct too. Qualifiers need to be added to eliminate the subsets. This Q is U because of two invalid responses. 05/21/10</p> <p>We had lengthy discussions about subset issues when we wrote this question and specifically wrote the question to include "a Reactor Trip will occur when" because we felt it was a qualifier that eliminated the subset issue. However, re-wrote the stem to add another qualifier there too. 05/31/10</p> <p>Revised question approved. RFA 06/07/10</p>
61	M	2	X									Y	N	E	<p>APE059AK1.01 I am not convinced that the stem excludes alpha. The distractor analysis is not clear on it either. The reference states that it is an internal hazard. The stem references an airborne concern. Add something to the stem to eliminate C as a potential correct answer. 05/21/10</p> <p>Changed stem of question to read "The radiation emitted from the water on the floor is primarily ". This will</p>

Q#	1. LOK (C/A)	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			
																eliminate alpha as a potential answer because it eliminates the airborne contamination. The only reason the airborne contamination is included is to give plausibility to the EMF-41 alarm. 05/31/10 Approved revised question. RFA 06/07/10
62	M	2				X							Y	N	U S	APE068AA1.01 I believe the interior doghouse will be readily eliminated due to common knowledge. Replace B1 and D1. This Q is U due to B1 and D1 being NP 05/21/10 Believe that if we replace B1 and D1 with anything else it will be less plausible than it is right now. Open to suggestions. 05/31/10 Facility explained that Interior Doghouse contained the PORVs for "B" and "C" SGs and the Exterior Doghouse contains the PORs for "A" and "D" SGs. Question accepted as written. Changed question from U to S. RFA 06/07/10
63	C	3					X						Y	N	E	APE069G2..4.50 Suggestion: Change A2 and D2 to "verify 1VQ-1A remains open" to make these a little more plausible. 05/21/10 Revised question per Lead Examiner's recommendation. Also, changed first "should" to "will" and second "should" to "shall" in the stem of the question per Lead Examiner's General Comments. 05/31/10 Approved revised question. RFA 06/07/10
64	M	2				X							Y	N	U	EPE074EA2.01 It is common knowledge that (-) WRT subcooling means subcooling is lost, A and C are NP. This Q is U because of two NP distractors 05/21/10 Chose replacement question. 05/31/10

Q#	1. LOK (C/A)	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			
																Approved revised question. RFA 06/07/10
65	M	2	X									Y	N	E		<p>We09EK3.1 Stem 2: "The basis, per procedure XXX, for checking" Include the basis procedure to completely rule out enhancing NC flow since the distractor analysis stated that it was a small beneficial reason. 05/22/10</p> <p>Changed question 2 to "The basis, per ES-0.2 Background Document for checking" per Lead Examiner's recommendation. 05/31/10</p> <p>Approved revised question. RFA 06/07/10</p>
66	C	3	X									Y	N	E		<p>G2.1.25 What reference is provided for this Q? It was not included as part of the Q. This Q is E until verified. 05/22/10</p> <p>Page from F-0 was missing from reference we provided. Added page to reference. 05/31/10</p> <p>Approved. RFA 06/07/10</p>
67	M	2										Y	N	S		<p>G2.1.26 No comment 05/22/10</p>
68	M	2				X						Y	N	U		<p>G2.2.25 It's common knowledge that the SD system is not safety related. A2 and C2 are NP. Replace A2 and C2. This Q is U because of two NP distractors.. 05/22/10</p> <p>Changed Steam Dump System and provided several options with regards to replacements for Steam Dump System. However, have serious concerns about this being too difficult after revision.</p>

Q#	1. LOK (C/A)	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			
	M	2											Y	N	S	No comment 05/22/10
75	C	3											Y	N	S	G2.4.50 No comment 05/22/10
SRO ONLY																
76	C	3											Y	Y	S	003G2.1.20 No comment 05/16/10
77	C	3											Y	Y	S	005A2.02 No comment Note: The justification on page B3.4. 12-8 of the reference should be before distractors C and D NOT A and B. 05/16/10 Revised the justification on reference page B 3.4.12-8 to say "This provides plausibility for distractors C and D". 05/31/10
78	C	3	X										Y*	Y	E	061A2.06 Must reference the procedure in the stem to fully meet the 2 nd part of the KA. 05/16/10 Revised question 1 in the stem to read "In accordance with OP/1/A/6250/002 (Auxiliary Feedwater System), what method would FIRST be used to reduce the temperature at the check valve?" 05/31/10 Approved revised question. RFA 06/08/10
79	M	2	X										Y	Y	E	076A2.01 Change the stem from "is limited to less than" to "shall not exceed" even though the procedure uses "is limited to less than". This bullet proves the Q so there is NO question that "A" could be construed as a possible correct answer. Changed "is limited to less than" to "shall not exceed". Another option would be to say "In accordance with AP-20, RN flow shall be throttled to maintain 1B RN pump flow less than _____. This would be in line with the wording in the AP. 05/31/10

Q#	1. LOK (C/A)	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			
																<p>Approved revised question. RFA 06/08/10</p> <p>Revisited question due to high miss rate during validation. Chose replacement question.</p> <p>Approved replacement question. RFA 07/06/10</p>
80	C	3										Y	Y	S	063G2.1.23 No comment 05/16/10	
81	M	2										Y	Y	S	015A2.01 No comment 05/16/10	
82	C	3										Y	Y	S	041G2.4.11 No comment 05/17/10	
83	C	3	X									Y	Y	E	002A2.02 Put "The crew shall wait until the reactor is tripped" in the stem and start each choice with "AND" / "OR" as indicated. It will read much better. 05/17/10 Revised question but in order to make this work as suggested had to make this two separate fill-in-the-blank questions. 05/31/10 Approved revised question. RFA 06/08/10	
84	M	2				X						Y	Y	U	APE015/017AA2.02 No highest power level is listed in distractor "C", therefore C is NP. If there is no ATWS, why would power be 10%? Distractor "A" is NP. Nothing in the reference supports 10%. The Q is U because of 2 NP distractors 05/17/10 Revised two of the distractors to eliminate potential NP distractors. 05/31/10 Revised proposed question to reduce power to less than 10% and 5% respectively in answers "C" and "D". Approved	

Q#	1. LOK (C/A)	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			
																revised question. RFA 06/08/10
85	C	3	X									Y	Y	E		<p>APE022G2.4.46</p> <p># 2 in the stem can be deleted. This Q is asked in stem #1. Or you can state in #2: "What are the restorative actions. As written, the stem seems a bit convoluted.</p> <p>Change B1 and D1 to "ensure letdown orifice isolation valves 1NV XXX auto close." The way it currently reads can be construed as teaching even though it is not true.</p> <p>05/17/10</p> <p>Revised question as suggested by Lead Examiner.</p> <p>05/31/10</p> <p>Combined two versions of question into one version.</p> <p>Approved revised question. RFA 06/08/10</p>
86	C	3	X				X					Y	Y	E		<p>APE027AA2.10</p> <p>Change Stem 1st bullet to 1A and 1B</p> <p>Change Choices B and D from 1D to 1B</p> <p>Change correct answer to "D"</p> <p>Reason: Q becomes more discriminatory.</p> <p>05/17/10</p> <p>Revised question as recommended by Lead Examiner. However, by changing question as requested, believe that answers C and D are both correct. Suggest we leave it as is.</p> <p>05/31/10</p> <p>Revised question per Lead Examiner's recommendation.</p> <p>Approved revised question. RFA 06/08/10</p>
87	M	2				X						Y	Y	U		<p>EPE038G2.4.11</p> <p>I was not able to deduce that the "lowest intact SG pressure" is an acceptable distractor because it was not made clear in the distractor analysis that this choice would be applicable in another circumstance. A reference was not provided to support this distractor either. FAC provide a case where this may be true.</p> <p>This Q is a U until this information is provided because of potentially 2 NP distractors.</p> <p>05/17/10</p> <p>Developed proposed replacement question. Replaced first part of question with another basis question from the AP.</p> <p>05/31/10</p>

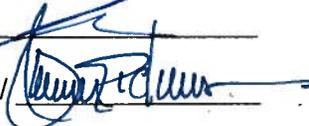
Q#	1. LOK (C/A)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
																<p>Approved revised question. RFA 06/08/10</p> <p>Revisited question due to high miss rate. Revised A2 and B2 to say "to ensure that there is sufficient NC System subcooling following depressurization".</p> <p>Approved revised question. RFA 07/08/10</p>
88	M	2										Y	Y	S	<p>APE058AA2.02</p> <p>No comment</p> <p>05/17/10</p>	
89	C	3				X						Y	Y	U*	<p>APE062G2.4.47</p> <p>Add the word "initially" before the word INOPERABLE. Otherwise, if the first part of B and D were correct, A and C would be correct too.</p> <p>The Q is a U because there are potentially 2 correct answers if the correct time was 1040 for the first part of the question.</p> <p>05/17/10</p> <p>Added the word "initially" per Lead Examiner's comment.</p> <p>05/31/10</p> <p>Approved revised question. RFA 06/08/10</p>	
90	M	2					X					Y	Y	E S	<p>APE003G2.2.40</p> <p>Due to the fact the Q is written in two parts renders distractor "D" NP. Change D1 to something other than 75.</p> <p>This Q is E because of 1 NP distractor.</p> <p>05/17/10</p> <p>Changed distracter "D" to 50% RTP as this was the only plausible answer remaining.</p> <p>05/31/10</p> <p>Keep original version of question. Kept distracter "D" as is since it was picked during validation. Changed question from E to S. RFA 06/08/10</p>	
91	M	2					X					Y	Y	E S	<p>APE069AA2.02</p> <p>Is it ever possible that the WCC SRO is ever the containment closure coordinator? If so B could be a</p>	

Q#	1. LOK (C/A)	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		
															<p>potential correct answer. FAC please confirm one way or the other. This Q is E until confirmed. 05/17/10</p> <p>The WCC SRO is never used to perform the function of the Containment Closure Coordinator. The Containment Closure Coordinator position is filled by individuals separate from the WCC SRO position. 05/31/10</p> <p>Based on facility comments, accepted question as is. Changed from E to S. RFA 06/08/10.</p>
92	C	3	X			X						Y	Y	U S	<p>APE076G2.4.11 Failed fuel is NP for Cobalt and Manganese. Either rewrite the stem or change distractors A and B. The Q is U because of 2 NP distractors. 05/17/10</p> <p>Believe that there is plausibility since two validators picked failed fuel as the correct answer. Went through AP-18 and AP-18 Background document again to determine if there is another possible direction for the first part of this question. There is very little content in AP-18 and very few options for replacing the first part without testing something that is minutia with little operational validity. 05/31/10</p> <p>Kept original version of question due to validators picking NP answers. Changed from U to S. RFA 06/08/10</p>
93	C	3	X									N Y	Y	U E	<p>WE03G2.4.46 I fail to see the connection between this Q and LOCA cooldown and depressurization. The stem bullets involve it by referencing ES-1.2, but the Q stem and choices do not. This Q is a U until FAC justifies. 05/17/10 OBTAIN PEER REVIEW ON THIS ONE</p> <p>In ES-1.2, the check for FWST level less than 250 inches with the Containment Sump Level Alarms DARK is a continuous action step to ensure that there is sufficient level in the sump to prevent vortexing at the suction of the ND pumps when the auto swapover level in the FWST is reached. This is an important step during Post LOCA Cooldown and Depressurization.</p>

Q#	1. LOK (C/A)	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			
																05/31/10 Revised question per Lead Examiner's comments to make fill in the blank. Accepted facilities explanation for this being Post LOCA Cooldown actions. Changed question from U to E. Lead Examiner now agrees that this meets the KA. RFA 06/08/10
94	M	2	X										Y	Y	E S	G2.1.4 For this particular question, since the times are the same for C and D, do not make this a fill in the blank. Consider writing C and D as follows: <i>An active licensed STA may assume the duties of the CRS provided the relief SRO is available to both return to the control room AND the periods which the STA assumes SRO duties do not exceed 10/15 minutes in duration respectively</i> Otherwise, C and D will be ruled out due to the way they are worded. This Q is E until modified. Reworded per Lead Examiner's suggestion. 05/31/10 Decided to leave question as is since validation data supports the plausibility of the distracters. Changed from E to S. RFA 06/08/10
95	M	2											Y	Y	S	G2.1.8 No comment 05/17/10
96	M	2	X										Y	Y	E	G2.2.40 Bullet proof B by adding something to the stem to completely rule out performing a SDM calc as stated in A since a SDM cal can be used if there is an issue with rod insertion limits or an inoperable control rod. 05/17/10 Added qualifier to the stem that rules out performing a SDM calculation as an option. 05/31/10 Approved revised question. RFA 06/08/10 Revisited question due to high miss rate during validation. Selected replacement question.

Q#	1. LOK (C/A)	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			
																Approved replacement question. RFA 07/06/10.
97	M	2	X					X					Y	Y	E	G2.2.6 Since 50.59 evaluations are NOT ever required for a minor change, I am not convinced that "A" is plausible. Consider rewriting distractor "A" or modifying the question stem to validate "A". 05/17/10 Revised question to ask a separate question about 10CFR50.59 reviews in general. Also, in the stem of the question, changed "should" to "shall" per Lead Examiner's General Comments. 05/31/10 Approved revised question. RFA 06/08/10
98	M	2											Y	Y	S	G2.3.12 No comment 05/17/10
99	C	2											Y	Y	S	G2.3.14 No comment 05/17/10 Revisited this question due to overlap with JPM on 2010 Audit Exam. Chose replacement question. Approved replacement question. RFA 07/08/10
100	C	2											Y	Y	S	G2.4.40 No comment 05/17/10

Before After
 20 U's / 12
 37 E's / 37
 43 S's / 51

Facility: McGuire		Date of Exam: August 12, 2010		Exam Level: RO/SRO		
Item Description				Initials		
				a	b	c
1.	Clean answer sheets copied before grading			kds	N/A	rfa
2.	Answer key changes and question deletions justified and documented			kds	N/A	rfa
3.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)			kds	N/A	rfa
4.	Grading for all borderline cases (80 ±2% overall and 70 or 80, as applicable, ±4% on the SRO-only) reviewed in detail			kds	N/A	rfa
5.	All other failing examinations checked to ensure that grades are justified			kds	N/A	rfa
6.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants			kds	N/A	rfa
Printed Name/Signature					Date	
a.	Grader/Reviewer	Kenneth D. Schaaf/		<u>8/25/10</u>		
b.	Facility Reviewer(*)	N/A	_____	<u>N/A</u>		
c.	NRC Chief Examiner (*)	Ronald F. Aiello/		<u>8/25/10</u>		
d.	NRC Supervisor (*)	Malcolm T. Widmann/		<u>08/26/10</u>		
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.						