

2010 BYRON STATION

INITIAL EXAMINATION

ADMINISTRATIVE FILES

Facility: <u>Byron Station, Units 1 and 2</u>		Date of Examination: <u>Weeks of 9/27 and 10/04/2010</u>
Developed by: Written - Facility <input checked="" type="checkbox"/> NRC <input type="checkbox"/> // Operating - Facility <input checked="" 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)	meb
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	meb
-120	3. Facility contact briefed on security and other requirements (C.2.c)	meb
-120	4. Corporate notification letter sent (C.2.d)	meb
[-90]	[5. Reference material due (C.1.e; C.3.c; Attachment 3)]	NA
{-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)	meb
{-70}	{7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)}	meb
{-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)	meb
-30	9. Preliminary license applications (NRC Form 398's) due (C.1.i; C.2.g; ES-202)	meb
-14	10. Final license applications due and Form ES-201-4 prepared (C.1.i; C.2.i; ES-202)	meb
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	meb
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f and h; C.3.g)	meb
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	meb
-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)	meb
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee (C.3.k)	meb
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	meb
<p>* 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.</p> <p>[Applies only] {Does not apply} to examinations prepared by the NRC.</p>		

1. Pre-Examination

9/27/2010 -

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 10/8/2010 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 10/8/2010. 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. ROBERT F PETERSON	EXAM AUTHOR	<i>Robert Peterson</i>	3/8/10	<i>Robert Peterson</i>	10/11/10
2. SCOTT M DEBREST	OTPS	<i>Scott M DeBrest</i>	3/18/10	<i>Scott M DeBrest</i>	11/11/10
3. Mark Rasmussen	Facility Rep / Shift Mgr	<i>Mark Rasmussen</i>	3/24/10	<i>Mark Rasmussen</i>	10/15/10
4. KEN SIMULET	SRO	<i>Ken Simulet</i>	06-22-10	<i>Ken Simulet</i>	11-09-10
5. Richard Hollis	RO	<i>Richard Hollis</i>	4/22/10	<i>Richard Hollis</i>	11-9-10
6. Mark Ristau	RO	<i>Mark Ristau</i>	6-29-10	<i>Mark Ristau</i>	10-21-10
7. JIMMY CONROY	SRO	<i>Jimmy Conroy</i>	6-29-10	<i>Jimmy Conroy</i>	11-9-10
8. Rob Fustkey	RO	<i>Rob Fustkey</i>	10/29/10	<i>Rob Fustkey</i>	10/21/10
9. Christine A. Cole	SRO	<i>Christine A. Cole</i>	6-23-10	<i>Christine A. Cole</i>	11-5-10
10. TERRY HOLDER	SIM OPERATOR	<i>Terry Holder</i>	7-15-10	<i>Terry Holder</i>	10-11-10
11. TODD KALISIK	SIM ANALYST	<i>Todd Kalisik</i>	7-16-10	<i>Todd Kalisik</i>	10-11-10
12. Guy Galster	RO	<i>Guy Galster</i>	7-23-10	<i>Guy Galster</i>	10/20/10
13. BRIAN CURRAN	SRO	<i>Brian Curran</i>	7/23/10	<i>Brian Curran</i>	10/21/10
14. BRIAN LEWIS	SRO	<i>Brian Lewis</i>	7/23/10	<i>Brian Lewis</i>	10/14/10
15. Mark K. Menged	NSO	<i>Mark K. Menged</i>	7-23-2010	<i>Mark K. Menged</i>	10-20-10

NOTES:

Copy of sheet 1 -

11-11-2010 04:30:43 PM

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* 2. SCOTT M DEPREST	OTPS	<i>Scott M Deprest</i>	3/18/10		
3. Mark Rasmussen	Facility Rep / Shift Mgr	<i>Mark Rasmussen</i>	3/24/10	<i>Mark Rasmussen</i>	10/15/10
4. KEN SIMOLET	SRO	<i>Ken Simolet</i>	06.22.10	<i>Ken Simolet</i>	11.09.10
5. Richard Hollis	RO	<i>Richard Hollis</i>	6/22/10	<i>Richard Hollis</i>	11.09.10
6. mark Ristau	RO	<i>mark Ristau</i>	6.29.10	<i>mark Ristau</i>	10-21-10
7. JOHN CONROY	SRO	<i>John Conroy</i>	6.29.10	<i>John Conroy</i>	11.9.10
8. ROB FRISKY	RO	<i>Rob Frisky</i>	6/29/10	<i>Rob Frisky</i>	10/21/10
9. Christopher A. Cote	SRO	<i>Christopher A. Cote</i>	6.29.10	<i>Christopher A. Cote</i>	11.5.10
10. TERRY HOLDER	SIM OPERATOR	<i>Terry Holder</i>	7-15-10	<i>Terry Holder</i>	10-11-10
11. TODD KALISIK	SIM ANALYST	<i>Todd Kalisik</i>	7-16-10	<i>Todd Kalisik</i>	10-11-10
12. Guy Galster	RO	<i>Guy Galster</i>	7-23-10	<i>Guy Galster</i>	10/20/10
13. Brian Currier	SRO	<i>Brian Currier</i>	7/23/10	<i>Brian Currier</i>	10/21/10
14. Brian Lewin	SRO	<i>Brian Lewin</i>	7/23/10	<i>Brian Lewin</i>	10/14/10
15. Mark K Mengel	NSO	<i>Mark K Mengel</i>	7-23-2010	<i>Mark K Mengel</i>	10-20-10

NOTES:

* See attached faxed form for Scott Deprest # 2 signature.

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PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1. Mark Mikos	NSO validator	<i>Mark Mikos</i>	07/25/10	<i>Mark Mikos</i>	11/05/10
2. Dan Cork	NSO validator	<i>Dan Cork</i>	7-25-10	<i>Dan Cork</i>	11/18/10
3. Elizabeth Bogue	ID / oversight	<i>Elizabeth Bogue</i>	7/24/10	<i>Elizabeth Bogue</i>	10/14/10
4. MARK EYSTER	IT ANALYST / SIM MAINT.	<i>Mark J. Eyster</i>	7/26/10	<i>Mark J. Eyster</i>	10/11/10
5. Gary Wolfe	Instructor / SRO written	<i>Gary Wolfe</i>	7/26/10	<i>Gary Wolfe</i>	10/11/10
6. Karen Northrup	Clerk	<i>Karen Northrup</i>	7/26/10	<i>Karen Northrup</i>	10/12/10
7. Tom Gale	NSO validator	<i>Tom Gale</i>	7/28/10	<i>Tom Gale</i>	11/5/10
8. Scott Miller	NSO validation	<i>Scott Miller</i>	7-28-10	<i>Scott Miller</i>	11-5-10
9. SHANE HARVEY	SRO validation	<i>Shane Harvey</i>	7-28-10	<i>Shane Harvey</i>	11/05/10
10. Ken Hetzel	SRO validation	<i>Ken Hetzel</i>	7/28/10	<i>Ken Hetzel</i>	11/5/10
11. Steve Bannard	Simulator operator	<i>Steve Bannard</i>	7/31/10	<i>Steve Bannard</i>	10/11/10
12. Richard Guerry	NSO	<i>Richard Guerry</i>	7/31/10	<i>Richard Guerry</i>	10/20/10
13. Laurel Tech	Simulator Operator	<i>Laurel Tech</i>	7/31/10	<i>Laurel Tech</i>	10/11/10
14. KENNETH E. HARRIS	SRO written exam validation	<i>Kenneth E. Harris</i>	8/3/10	<i>Kenneth E. Harris</i>	11/5/2010
15. Mark Crawford	SRO written exam validation	<i>Mark Crawford</i>	8/3/10	<i>Mark Crawford</i>	10/19/10

NOTES:

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9/27/2010 -
10/8/2010

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PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE	NOTE
1. Lynn Sanders	Instructor LVRT Exam	<i>Lynn Sanders</i>	8-23-10	<i>Lynn Sanders</i>	10/11/10	
2. BLAINE PETERS	SRO / ILT VALIDATION	<i>Blaine Peters</i>	9/7/10	<i>Blaine Peters</i>	10/20/10	
3. Stephen Lorenz	NSO / ILT Validation	<i>Stephen Lorenz</i>	9-7-10	<i>Stephen Lorenz</i>	11/9/10	
4. Tim Coleman	NSO / ILT VALIDATE	<i>Tim Coleman</i>	9-7-10	<i>Tim Coleman</i>	11-9-10	
5. TIMOTHY L. McDOUGAL	NSO / ILT VALIDATE	<i>Timothy L. McDougal</i>	9/8/10	<i>Timothy L. McDougal</i>	10/20/10	
6. Richard M. Williams	SM / ILT VALIDATION	<i>R.M. Williams</i>	9/9/10	<i>R.M. Williams</i>	11/5/10	
7. Kathryn E. Hodges	Clerk / Printing	<i>Kathryn Hodges</i>	9-22-10	<i>Kathryn Hodges</i>	10/13/10	
8. MICHAEL L. COFFMAN	INSTRUCTOR	<i>Michael L. Coffman</i>	9/24/10	<i>Michael L. Coffman</i>	10/11/10	
9. Mark Zalagans	Instructor / Sim Support	<i>Mark Zalagans</i>	9/28/10	<i>Mark Zalagans</i>	10/11/10	
10. Steve Raine	Instructor / Surrogate	<i>Steve Raine</i>	9/29/10	<i>Steve Raine</i>	10/11/10	
11.						
12.						
13.						
14.						
15.						

NOTES:

Tier / Group	Randomly Selected K/A	Reason for Rejection
RO T1/G1	062 2.2.17	Can't write relevant RO level question on Managing Maintenance Process on Loss of SX. Replaced with 2.2.15 to determine expected plant configuration.
RO T1/G1	065 2.2.18	Can't write relevant RO level question on Managing Maintenance Activities on Loss of IA. Replaced with 2.2.41 to interpret mechanical drawings.
RO T1/G2	003 2.4.21	Overlapped with SRO exam 029; also assessing safety functions for a dropped rod not a good fit for RO level. Replaced with 2.4.8 for knowledge of relationship of AOPs and EOPs.
RO T2/G1	022 A4.04	Overlapped System JPM for CNMT Cooling. Replaced with A4.04 for CNMT readings.
RO T2/G1	026 2.4.41	EAL classification not RO responsibility. Replaced with 2.4.31 for knowledge of procedures.
RO T2/G1	061 K5.01	Same K/A on audit exam. Replaced with K5.05 for feed line voiding.
RO T2/G1	064 K1.02	Same K/A on audit exam. Replaced with K1.03 for fuel oil supply system.
RO T2/G1	076 A2.02	Overlap with SRO exam. Replaced with A3.02 for emergency heat loads.
RO T2/G2	014 2.2.14	Can't write a relevant question for process of controlling equipment configuration of Rod Position System. Replaced with 2.2.40 to apply TS.
RO T2/G2	034 A2.01	Oversampled-also on SRO exam. Replaced with 033 A2.02 for Loss of SFP cooling
RO T3	2.1.25	Oversampled-also on SRO exam. Replaced with 2.1.15 for knowledge of temporary management directives.
RO T3	2.3.05	Overlapped SRO exam. Replaced with 2.1.20.
RO T3	2.4.23	Overlapped SRO exam. Replaced with 2.4.39.
SRO T1/G1	WE12 2.4.25	Can't write a relevant question about the Fire Protection procedures as related to Uncontrolled Depressurization of SGs. Replaced with 2.4.41 for EAL action levels and classifications.
SRO T1/G1	058 2.4.23	Overlapped RO exam. Replaced with 2.4.32 for response to loss of all annunciators.
SRO T1/G2	W/E02 2.1.42	K/A for Fuel Handling doesn't fit SI termination; Also oversamples topic with RO W/E01 selected. Replaced with W/E08 2.1.7 for evaluating and making judgements for PTS.

SRO T2/G2	103 A2.04	Overlapped SRO admin JPM. Also, cnmt questions have been sampled so that can't write a unique question for available topics. Replaced with 061 A2.05.
SRO T2/G2	029 2.1.34	K/A for knowledge of chemistry limits doesn't fit with CNMT purge system. Replaced with 2.1.36 for procedures for core alterations.
RO T2/G1	063 A4.03	Cannot monitor battery discharge rate from Byron MCB. Replaced with A4.02 for battery voltage indication, which is on the Byron MCB.
RO T2/G1	078 K4.01	K/A is for "manual/automatic transfer of control" of IA system. There are no manual or automatic transfer features of the IA system at Byron. Replaced with K4.02 for crossover to other systems.
RO T2/G2	011 K5.04	K/A is double jeopardy with question # 3 (28112)-K/A 004 K4.13. Replaced with K5.06 for Operational implications of seal flow plus charging flow
RO T1/G2	036 AA2.03	K/A is not an RO function-determining the magnitude of a release from a FH accident is a Nuclear Engineer function. Replaced with AA2.02 for Occurrence of a FH incident.

Facility: <u>BYRON</u>		Date of Exam: <u>10/8/10</u>		Exam Level: RO <input checked="" type="checkbox"/> SRO <input checked="" type="checkbox"/>	
Item Description	Initials				
	a	b	c		
1. Clean answer sheets copied before grading	RFP	MA	MEB		
2. Answer key changes and question deletions justified and documented	RFP	MA	MEB		
3. Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	RFP	MA	MEB		
4. Grading for all borderline cases (80 ±2% overall and 70 or 80, as applicable, ±4% on the SRO-only) reviewed in detail	RFP	MA	MEB		
5. All other failing examinations checked to ensure that grades are justified	RFP	MA	MEB		
6. Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	RFP	MA	MEB		
Printed Name/Signature		Date			
a. Grader	<u>Robert F. Peterson / RFP</u>	<u>10/11/10</u>			
b. Facility Reviewer(*)	<u>M. Rasmussen / Mark Rasmussen</u>	<u>10/13/10</u>			
c. NRC Chief Examiner (*)	<u>Michael Bielby / Michael E. Bielby</u>	<u>10/20/10</u>			
d. NRC Supervisor (*)	<u>Hironori Peterson / Hironori Peterson</u>	<u>11/10/10</u>			
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.					

THERE WERE NO NRC COMMENTS AND RESOLUTION ON THE LICENSEE
OUTLINE FOR THE BYRON 2010 INITIAL EXAMINATION.

Operating Test Comments

JPM Comments

*SRO-U,-I,RO

A1-RO	Changed JPM step 9 cues from "ACB 2412 BUS ALIVE light is LIT..." and "ACB 2422 BUS ALIVE light is LIT..." to "BUS 241 BUS ALIVE..." and "BUS 242 BUS ALIVE..."
A2-RO/SRO	<p>Added "The examiner will provide approval signatures when required." to the Initiating Cue.</p> <p>Added cue before JPM step 1 "CUE: The reactor tripped at _____." (NOTE to Evaluator: Fill in the time as 5 minutes before the JPM start time.)"</p> <p>Change step 2 cue from "CUE: The SRO has signed step F.1.k." to "Evaluator Note: Sign step F.1.k as the SRO."</p> <p>Added step 3 cue "Evaluator Note: Sign step F.3.g as the SRO."</p>
A3-RO	<p>Added to Step 1 "and a calculator."</p> <p>Changed JPM step 3 Standard from "44.33 PSIG ((44 to 45 PSIG)" to "\leq 44.33 PSIG".</p> <p>Changed JPM step 5 to OC GDT is 4×10^4 CURIES (Had left off the "4")</p>
A1-SRO	Changed the Initial Conditions list of personnel to a table
A3-SRO	Removed from JPM step 10: " Cue: Log entry made, by the U1 NSO, stating that this is an "planned entry" " and "ENTER "Planned" in LOG".
A4-SRO	<p>Added new "2. Jay Eby, ext 2473, is originating the Containment Entry Checklist, BAP 1450-T2." to the Initiating Cues.</p> <p>Added "Jay Eby" and "2473" to JPM step 3 Standard.</p>
A5-SRO	Changed Plant Conditions step 4 " <u>Annunciator 0-38-E5, "Accelerograph Accel High" is in alarm and the National Earthquake Center reports it as a 0.3g seismic event</u> " to separate steps: " <u>Annunciator 0-38-E5, "Accelerograph Accel High" is in alarm</u> " and " <u>The National Earthquake Center reports it as a 0.3g seismic event.</u> "
Sim/CRa	<p>Page 4 Added Close 1CV8149A-C, and 1CV459 and 1CV460. Close 1CV8105 and 1CV8106.</p> <p>Page 5 Added "Reactor Power is < 99.5%" and "and BOTH letdown heat exchangers to for maximum cooling."</p> <p>Page 6 Changed "remains" to "stabilizes at"</p>
Sim/CRg	<p>Page 6 Changed generator output cue to 1245MW</p> <p>Page 7 Added NOTE to "When the candidate highlights the calorimetric calculation on the Alarm typer, direct the candidate to NOT select print, and provide the copy of the computer printout."</p> <p>Page 8 Inserted new step 11 to Highlight the calorimetric calculation on the Alarm Typer and select PRINT, and moved cue to Provide the printout to this step. Fixed typo (NI 41)</p> <p>Following pages Renumbered steps appropriately, including the critical steps. Renumbered the critical steps on the summary page 10.</p> <p>Page 9 Changed critical step 20 standard to 99.91% to 100.41%.</p>
IPi*	Added CUE: (if asked): The MCR controllers for AF005A-D on PM06J indicate 0. to

Operating Test Comments

	NOTE before JPM step 4.
IPj*	<p>Made the JPM specific for a 111 to 211 DC crossties. Filled in blanks to 211 or 111 as appropriate. Changed rev # to 4 and updated Revision Summary page.</p> <p>Changed JPM step 3 from "Cue: The meter selection switch is in the 'BUS' position" to "NOTE: The meter will read the same voltage in either the Bus or Battery position."</p> <p>Removed "Select 'Bus' for the Bus Meter" from JPM step 3 standard.</p> <p>Removed Note before JPM step 7: "The last two steps may be performed in either order – the preference is to close DF1 on the Bus this JPM is being performed on LAST. If on U1 step F.1.h (JPM #8) is performed first and on U2 step F.1.g. (JPM #7) is performed first."</p>
IPk*	<p>Made the JPM specific to Unit 1. Filled in blanks to make Unit 1 as appropriate. Changed rev # to 4 and updated Revision summary page.</p> <p>Removed Unit 2 locations from JPM step 1</p>

Scenario Comments

Scenario 10-1-95% BOL; steamline break inside ctmt; faulted SG	<p>Page 3 Changed IOR to IMF Changed Plant Summary to Plant Status</p> <p>Page 4 Changed CD/CB-2 to CD/CB-1 Added IOR ZAO0IICS03PC 365 to event 3 to prevent candidate throttling 0CW220 because of pump runout</p> <p>Page 5 Added "and begin the ramp as soon as possible" to event 6</p> <p>Page 6 Made Verify with EO...and Check Oil Pressure OPEN Bullets as they are substeps of Starting the LO pump</p> <p>Page 8 Removed typo ("r" after RCP)</p> <p>Page 14 Changed boration amount to 240 gallons and rods to 178 steps to better match Rema.</p> <p>Page 17 Removed "for train B"</p> <p>Page 19 Changed to "1B CS pump is running" and Group 6 phase B lights "ALL LIT except CS PUMP A RUNNING light is NOT LIT</p> <p>Page 20 Inserted Page Break to keep Critical Task steps together on next page</p>
Scenario 10-2-12% BOL; SGTR; SI	<p>Page 1 Changed 14% to 12% and 154 steps to 147 steps. Added "The offgoing shift has just diluted 100 gallons" and "1A MDFP is OOS for maintenance."</p> <p>Page 2 Changed 14% to 12% and 154 steps to 147 steps. Added "The offgoing</p>

Operating Test Comments

	<p>shift has just diluted 100 gallons" and "1A MDFP is OOS for maintenance."</p> <p>Page 3 Added "Dilute 100 Gallons. Provide a boration/dilution log with 100 Gallons Dilution for Temperature Control to the oncoming crew. Provide 1BGP 100-3T1 initialed up to step 27." Added Place C/O tags on the 1A MDFP C/S, its aux oil pump C/S, discharge valve C/S, and recirc valve C/S.</p> <p>Page 4 Added "1BGP 100-3" to event 1 and event 2 actions (typo)</p> <p>Page 6 Made turn on Synch Switch, Adjust Gen Volt and Adjust Gen speed OPEN Bullets Added "Adjust Feedwater Flow as needed"</p> <p>Page 7 Changed 1CV9149B to 1CV8149B</p> <p>Page 12 Added (1-10-D8) to PDMS inoperable; (1-10-B6) to RIL alarm; (OWS graphic 5501) to Turbine RB; and (BP 4.6) to C-7</p> <p>Page 14 Removed "for train B"</p> <p>Page 15 Inserted Page Break to keep Critical Task steps together on next page</p> <p>Page 17 Combined the steps to isolate steam flow and feed flow in one critical task. Bolded the critical steps and added note that (critical steps are bold)</p> <p>Page 18 Added "When necessary, bypass P-12 interlock using Bypass Interlock Switches A & B"</p>
<p>Scenario 10-3-55% MOL; Primary Leak; ATWS</p>	<p>Page 4 Changed to "IMF TU01D 9 1200 6" and added "from an initial severity of 6"</p> <p>Page 9 Typo "T0402"</p> <p>Page 13 Added "and bypassed"</p>
<p>Scenario 10-4-95% BOL; Loss of FW</p>	<p>Page 8 Changed "raise" to "lower"</p> <p>Page 9 Changed 1CV9149B to 1CV8149B Added "Orifice Isol Valves" and "Letdown Isol Valves"</p> <p>Page 10 Changed 1CV8148A-C to 1CV8149A-C</p> <p>Page 11 Added "Recirc Valve"</p> <p>Page 15</p>

Operating Test Comments

<p>Scenario 10-5-100% EOL; Unisolable Primary Leak</p>	<p>Moved "Check at least 1 CV pump running"</p> <p>Page 1 Made MF TH08A 10 instead of 100 Removed TS call for events 4 and 6</p> <p>Page 4 Made MF TH08A 10 instead of 100</p> <p>Page 5 Changed leak size to 50 (per outline)</p> <p>Page 6 Removed Verify/place 1CV112A to VCT & Verify/place 1CV129 to DEMIN Added step numbers Changed 1CV8402B to 1CV8401B Changed US step to Notify Rad Prot and Chemistry of change in CVCS lineup</p> <p>Page 9 Changed CREW actions to "Notify Chemistry to calculate decontamination factor of letdown demineralizer" & "Notify Chemistry sample for DE I-131 and gross radioactivity" Added " May place AB Charcoal Booster Fans 0VA03CB and 0VA03CF in service"</p> <p>Page 11 Changed (0-37-e6) to (0-37-E6) Made step to evaluate TS 3.7.9 an OPEN BULLET</p> <p>Page 13 Added "Annunciator CNMT VENT ISOL (1-1-C5) is LIT" Changed Close 1CV8324A to Close 1CV8324B</p> <p>Page 14 Made step to evaluate TS 3.4.13 an OPEN BULLET</p> <p>Page 16 Remove "for train B"</p> <p>Page 18 Changed "IF the leak size hasn't been increased before reaching step 7" to "IF the leak size hasn't been increased before reaching step 17"</p> <p>Page 21 Changed 1SI8804A to 1CV8804A</p>
--	---

Exelon Generation Company, LLC
Byron Station
4450 North German Church Road
Byron, IL 61010-9794

www.exeloncorp.com

October 15, 2010

LTR: BYRON 2010-0124
File: 1.10.0101

NUREG 1021 Rev. 9
Section ES-501

Mark Satorius
Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road Suite 210
Lisle, IL 60532-4352

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Submittal of 2010 Byron Initial License Examination Post-Examination Comments

Enclosed are the post examination comments for the 2010 Byron Initial License Examination administered September 27 to October 8, 2010. This submittal includes comments on two exam questions. It is our recommendation that question #91 be corrected to reflect a different correct answer than the original and grading adjusted accordingly, and that question #53 remain unchanged.

In addition, the items listed below will be hand delivered to Mike Bielby, Chief Examiner, or his designee, at NRC Region III offices.

- Graded written examinations with copy of each applicant's answer sheet
- Master examinations and answer keys
- Questions / answers during the written examination
- Substantive comments / responses following the exam
- Written examination seating chart
- Results of any written examination performance analysis performed

Original Form(s) ES-201-3, "Examination Security Agreement," with pre- and post-examination signatures will be delivered as soon as all the post-examination signatures have been completed.

Per our discussion with Mike Bielby, we request the NRC withhold public disclosure of the exam in ADAMS for 2 years so we can have the exam available for internal use.

Should you have any questions concerning this letter, please contact David T. Gudger, Regulatory Assurance Manager, at 815-406-2800. For questions concerning the enclosure materials, please contact Robert F. Peterson at 815-406-3228.

Respectfully,



Daniel J. Enright
Site Vice President
Byron Generating Station

DJE/RPF/TLH/cy

Attachments

cc: NRC Senior Resident Inspector – Byron Station w/o attachments

OCT 15 2010

ecc: Illinois Emergency Management Agency - Division of Nuclear Safety, w/o attachments
Site Vice President – Byron Station, w/o attachments
Vice President - Licensing and Regulatory Affairs, w/o attachments
Regulatory Assurance Manager - Byron Station, w/o attachments
Director - Licensing and Regulatory Affairs – Braidwood and Byron, w/o attachments
NRC License Coordinator – Byron Training, with attachments
Exelon Document Control Desk Licensing, w/o attachments

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Director - Licensing and Regulatory Affairs – Braidwood and Byron, w/o attachments
NRC License Coordinator – Byron Training, with attachments
Exelon Document Control Desk Licensing, w/o attachments

Question 53

Given the following plant conditions:

- Annunciator 1-1-C7, "Remote S/D Panel Trouble" is LIT
- SER Point 1846 is printed for "Remote Shutdown Panel IA Press Low/Loss of Power Alarm".

Reference(s) provided.

With this alarm LIT, Relay 1PSL-IA9X is ___(1)___, and device 1EL-IA009 is ___(2)___.

- | | ___(1)___ | ___(2)___ |
|----|--------------|--------------|
| A. | de-energized | energized |
| B. | energized | energized |
| C. | energized | de-energized |
| D. | de-energized | de-energized |

Answer: A

Answer Explanation:

With low pressure, 1PSL-IA009 is open, de-energizing relay 1PSL-IA9X. Contact 1PSL-IA9X is NC, so is closed, energizing 1EL-009.

The annunciator has contact 1PSL-IA9X 3-4, which is NC, and has to be closed to bring in the alarm.

Provided reference: 6E-1-4030IA06

K/A APE065 G2.2.41 Loss of Instrument Air: Ability to obtain and interpret station electrical and mechanical drawings.

Applicant: [REDACTED]

Applicant's comment:

Choice D: "de-energized, de-energized" is the correct answer.

The question did not state that Radwaste Panel alarm 0PL01J - 3 - A6, "Panel Inst Air Supply Press Low" was lit, as would be expected if IA pressure were low. Per NRC rules, since the alarm was not in, only a loss of power or blown fuse could cause the listed alarm. If the annunciator circuit had lost power or fuse FU4-X or FU4-Y had blown, then both Relay 1PSL-IA9X and device 1EL-IA009 will be de-energized.

The clarification came after the applicant completed the exam. Also, the clarification failed to address the lack of Radwaste Panel alarm.

Facility recommendation:

The applicant asked for clarification on question 53; "Is the failure a fuse or just loss of air?" The proctor's response was "Fuses are intact and the annunciator circuit has power available." The response was delayed while the clarification was being researched, and when the clarification was made, the applicant had turned in his exam and left. There were still 2 hours left before the end of the RO exam.

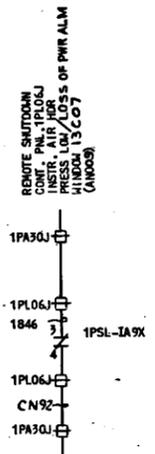
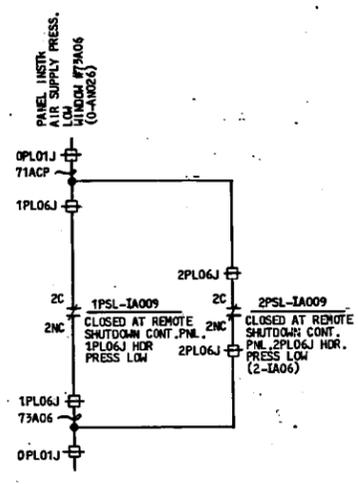
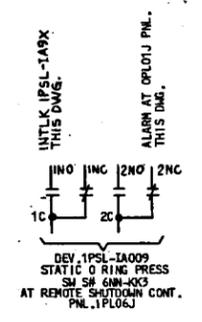
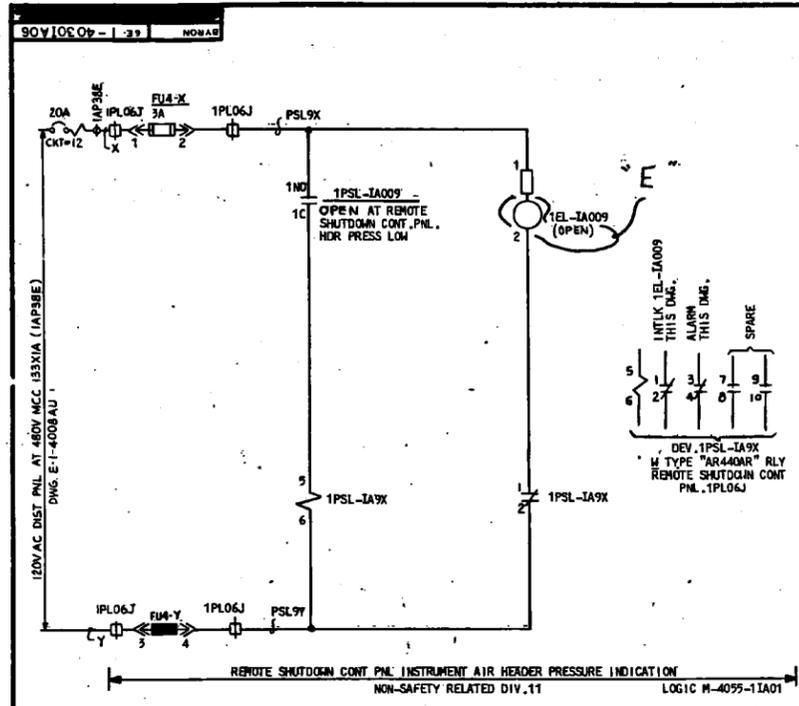
The clarification eliminates a loss of power or blown fuse as the cause of the failure, leaving Choice A: "de-energized, energized" as the correct answer, because device 1EL-IA009 is

Byron NRC Exam Applicant Comments

energized. The clarification was justified because the applicant still has to interpret the drawing and was not cued as to the status of the listed devices by the clarification. 6E-1-4030IA06 is attached, with an explanation of the answer written on it.

The applicant turned in his exam before the clarification was made. He had been informed his question was being evaluated, so the information would have been available to him had he chosen to wait for the response.

The facility recommends making no change to the grading of the question.



THIS UNDER STATION DRAWING WAS CREATED FROM THE ORIGINAL DRAWING TO CORRECT DRAWING

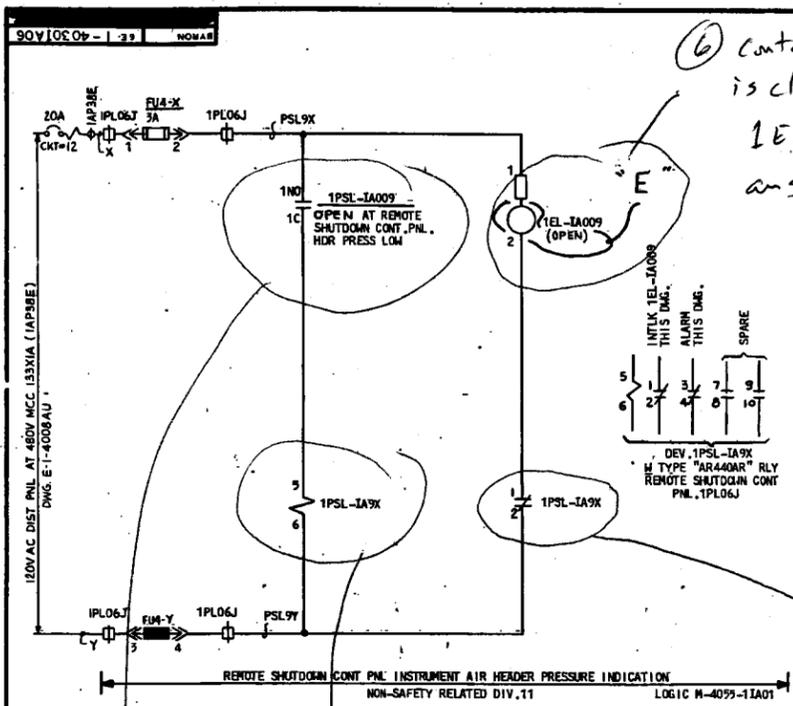


REF. DRAWING	DESCRIPTION	REV.	DATE	DESCRIPTION	CHECKED	ENGR. APPROVAL
E-1-4030 SERIES	S/D-NOTES, LEGEND & REF. DWGS.	A		REL FOR ELEC. INSTALL SPEC. F/L-2790		
E-0-4096 SERIES	INT/EXT W/D-LIQUID RAD CONT. PNL. (PRL1)	B	3-30-80	REVISED FOR ALLOCATION FOR 2000		
E-1-4091 SERIES	INT/EXT W/D-REMOTE SHUTDOWN CONT. PNL. 1PLOGJ	C	1-11-81	REVISED FOR P-23315 FOR RACE BURNING		
		D	2-08-81	REVISED FOR NEW PNL. 1PLOGJ		
		E	5-25-81	REV. BY L. E. FOR REVISIONS PER REV. 1/81		

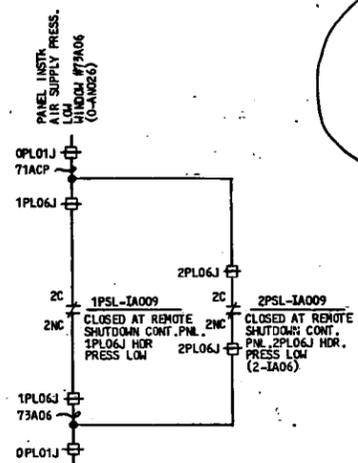
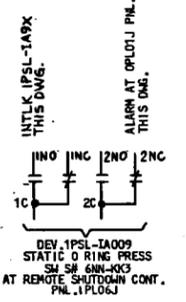
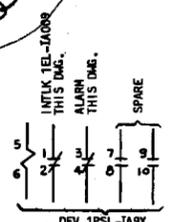
SCALE	DRAWN	CHECKED	ENGR. APPROVAL
	W. Wall	J. J. J.	

DATE	BY	DESCRIPTION
02-11-80	W. Wall	REVISED FOR P-23315 FOR RACE BURNING
02-01-80	J. J. J.	REVISED FOR NEW PNL. 1PLOGJ
01-11-80	J. J. J.	REVISED FOR P-23315 FOR RACE BURNING
09-23-79	R. X. French	REVISED FOR P-23315 FOR RACE BURNING

BBHE-4256(A) BBHE-14335(E) BBHE-4941(B) BBHE-8705(D) 07



⑥ Contact 1PSL-IA9X 1-2 is closed, energizing 1EL-IA009. This answers part (2) of the question.



① Given - alarm is LIT

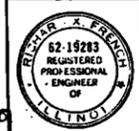
② Contact is closed. This is a "normally closed" contact, so 1PSL-IA9X relay is de-energized.

③ Relay is de-energized, so contact 1PSL-IA009 is open. This answers part (1) of the question.

⑤ Contact is "normally closed", so is closed since Relay 1PSL-IA9X is de-energized.

④ open due to low air pressure.

THIS UNDER STATION DRAWING WAS CREATED FROM THE PFACTOR DRAWING IN COMMON DRAWING



REFERENCE DRAWINGS		DRAWING RELEASE RECORD		DRAWN		SCHEMATIC DIAGRAM	
DWG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	CHECKED	ENGR. APPROVAL	DESCRIPTION
E-1-4090 SERIES	S/D-NOTES, LEGEND & REF. DWGS.	A		REL FOR ELECT			REMOTE SHUTDOWN CONTROL PANEL
E-0-4096 SERIES	INT/EXT W/D-LIQUID RAD CONT PNL.			INSTALL SPEC			INSTRUMENT AIR HEADER PRESSURE ALARM
E-1-4091 SERIES	INT/EXT W/D-REMOTE SHUTDOWN CONT PNL.	B	6-30-70	INSTALLATION			BYRON/STATIONS-UNIT 1
		C	8-23-70	INSTALLATION			COMMONWEALTH ENGINEERING CO.
		D	10-28-70	INSTALLATION			CHICAGO, ILLINOIS
		E	1-2-71	INSTALLATION			

For the given indication in the question that 1CV121 controller "Decrease" light is lit, there must be 0% demand on 1CV121, indicating 1CV121 is closed. In this situation, charging flow will be 0 GPM.

Facility recommendation:

The Byron simulator used to respond in the manner stated in the question, with 1CV121 "Decrease" light lit when the Master Pzr Level controller had minimum demand, and maintained 52 GPM charging flow.

Simulator Work Request 11733 "M/A Station for 1CV121 should indicate approximately 26% in Auto when at minimum flow of 52 GPM" was created on 5/14/2009, based on IR 918608. The simulator was subsequently changed so that when the Master Pzr Level controller has minimum demand output, 1CV121 "Decrease" light is not lit, and there is 52 GPM charging flow.

For the conditions stated in the question, if 1CV121 "Decrease" light is lit, 1CV121 will be fully closed, and charging flow will be 0 GPM, as stated in Choice D.

The facility agrees with the applicant's comment. The question should be changed so that Choice D: "0, manual control of 1CV121 per 1BOA Inst-2, Operation with a Failed Instrument Channel" is the correct answer.

Simulator Work Request



SWR # 11733

Site/Unit	Status	System
Byron	Closed	CV

Title/Short Description
M/A Station For 1CV121 Should Indicate Approximately 26% In Auto When At Minimum Flow Of 52 g

Work Requested
<p>When minimum flow (52 gpm) is demanded on the 1CV121 controller in automatic mode, the M/A station should indicate approximately 26%. It currently indicates 0%, so when manual mode is entered, flow immediately drops to zero. In IC 21, stabilized values on 1LK-459 should be approximately 44% and 1FK-121 should be approximately 67%. Investigate and repair.</p> <p>This was noted during IM training and feedback was submitted by C. Harrison, IMD via IR 918608.</p>

Panel Information:	1PM05J
IC Information:	21
Initiator:	Training
Requested By:	[REDACTED]
Requested Date:	5/14/2009

Reference Plant Change Information	
Number	Date

Simulator Supervisor Administration	
Authorized By:	[REDACTED]
Authorized Date:	5/18/2009
SRB Number:	
Priority:	C Routine <input type="checkbox"/> Deferred: <input type="checkbox"/>
Type:	Maintenance
Responding Department:	SW
Malfunction Update Review Complete:	Y

Maintenance Administration				
Assigned To:	[REDACTED]			
Due Date:	12/31/2009			
Completion Date:	7/6/2009			
Closed Date:	7/8/2009			
Exam Security Review Complete	Preliminary:	Y	Final:	Y

Computer Administration				
IT Project Methodology		Funding		
		Department	Required	Provided
Required:	N	Software		
Initiated:		Hardware		
		Site IT		

Remote Functions	
Added	
Deleted	
Malfunctions	
Added	
Deleted	

Work Performed

Appended on 5/15/2009 9:09:01 AM by [REDACTED]
 Introduced the bias of 52 gpm for the controller 1CV121 to indicate the correct numbers for the M/A station. At the same time the value of the normalization const CVKTNCCP was changed from 0.0033 (1/303) to 0.005 (1/200), which is the right normalization for the flow; 0-200 gpm.

The constant adjustment will require re-snap all ICs - put 1CV121 and 1FK459 controllers into manual right after IC load. Adjust the flow CVFT121A to its nominal value (i.e. in the IC 21 it is 135.5 gpm). Put the above controllers back into auto mode and re-snap the IC (from T.Holder).

Appended on 6/1/2009 6:34:49 PM by [REDACTED]
 reset to ic21
 inserted malfunction to fail controlling Pzr level channel to 100%
 observed that master Pzr Lvl controller demand dropped to 0%
 observed that in approximately 5 minutes, CV121 controller reached approximately 26%
 placed 1CV121 in manual and adjusted charging flow above and below nominal 52 gpm
 restored 1CV121 to automatic and observed that controller slowly returned to approximately 26%

Test Procedure

reset to ic 21
observe that 1LK-459 indicates approximately 44% in auto
observe that 1FK-121 indicates approximately 67% in auto
imf rx13a 100
observe that 1LK-459 drops to 0%
observe that 1FK-121 drops to approximately 26%
observe that 1FI-121 indicates approximately 52 gpm
place 1FK-121 in manual and observe that flow remains approximately 52 gpm
decrease demand on 1FK-121
observe that flow reduces to 0 gpm as demand is decreased to 0%
increase demand on 1FK-121
observe that flow raises above 52 gpm as demand is raised above 26%
place 1FK-121 in auto
observe that demand trends back to 26% and flow trends back to 52 gpm

Estimated Costs

Department	Hours	Rate	Total
Software	12	\$100.00	\$1,200.00
Hardware	0	\$100.00	\$0.00
Site IT	0	\$100.00	\$0.00
Training	0	\$100.00	\$0.00
Other Costs			\$0.00
Total Cost			\$1,200.00

Actual Costs

Department	Hours	Rate	Total
Software	12	\$100.00	\$1,200.00
Hardware	0	\$100.00	\$0.00
Site IT	0	\$100.00	\$0.00
Training	0	\$100.00	\$0.00
Other Costs			\$0.00
Total Cost			\$1,200.00

Comments

Software Change Information			
Files Changed			
File Name	Revision	Build File/Executive	Action
scv121.f	REV I	mst.exe	Modified
init.dat	N/A	N/A	Modified
Constants Changed			
Constant Name	Old Value	New Value	Action
CVKTNCCP	0.0033	0.005	Modified
Variables Changes			
Variable Name	Initial Value	Partition	Action
I/O Point Changes			
I/O Point Name	Details		Action

 Go Back

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AR 00918608 Report

Aff Fac:	Byron	AR Type:	CR	Status:	COMPLETE
Aff Unit:	00	Owed To:	A8861CAP	Due Date:	06/11/2009
Aff System:	TM			Event Date:	04/20/2009
CR Level/Class:	4/D			Disc Date:	04/20/2009
How Discovered:	H02			Orig Date:	05/12/2009
WR/PIMS AR:		Equip Tag:	-		

Action Request Details

Subject: TRAINING SIM M/A STATIONS BEHAVIOR NOT MODELED PROPERLY-3 IS

Description: Originator: [REDACTED] Supv Contacted: [REDACTED]

Condition Description:

Training Simulator M/A station's behavior not modeled properly-3 issues.

Recently, when the behavior of some MCB Training Simulator M/A stations were observed, it was noted that behavior modeled was incorrect. There were 3 issues that were noted. One quite important one has to do with possibly all the 7300 M/A stations behavior in MANUAL mode. Another had to do with the responses of FK- CV121. A third issue has to do with the response of M/A stations SK-0509B & C for the TDFW pumps. After discussions with Brian Clark and Terry Holder, corrections to the modeling of the Simulator are supposed to be already in the works, but for info, I will attempt to describe the issues in detail below.

The first and most important issue was that the Manual response of each observed (thus probably all) 7300 M/A station was not proper. In Manual, outputs ramp much faster than they should. A real 7300 M/A station output in Manual (with the behavior Byron has selected presently) takes 20 seconds to linearly ramp from 0 to 100 % output. The Simulator M/A stations observed ramped from 0 to 100% in approximately that time, or less. I understand that this has significant implications, but this should be corrected. Perhaps this is at the root of the reason Braidwood uses the other Manual behavior on all their plant 7300 M/A stations, including MFRV M/A stations? (IRs 742105, 298865)

The second issue had to do with the CV121 controller M/A response. A small variety of behaviors that were not accurate were observed. At one point, the CV121 M/A output was at zero with the Low Limit lite lit, but the FI-121 flow indicator stayed at 52 GPM, which is incorrect. When FK-121 was put to Manual, the output did not respond to the Raise pushbutton, which is incorrect. Another time the CV 121 flow control M/A station output was driven to a low value by the LC459 output. With a stable, on scale M/A station output indicator reading, the CV121 M/A station MANUAL button was pressed, and the M/A station output indicator immediately fell to zero percent, which is incorrect.

The real CV121 flow controller M/A station output will not fall to zero when the M/A station is put to manual, but will freeze the signal to the valve, and respond to the Operators pressing of the RAISE and LOWER buttons, just like any other M/A station. The operator will be able to drive the 121 valve all the way shut in manual if he wanted, driving flow

to zero.

The confusion for modeling the 121 behavior comes in, I suppose, due to a bias of 26% which essentially is added to the signal coming from LC-0459, resulting in 52 GPM even when LC-0459 output is 0%. If LC-0459 were, for some reason, to put its output at 0%, the CV121 controller set point is still: $0 + 26\% = 26\%$.

The CV121 M/A station in AUTO under those conditions will maintain flow at approximately 52 GPM (flow range 0-200GPM). Again, if the M/A station is put to manual, the control loop will go to manual just like any other loop, freezing the output and waiting for a RAISE or LOWER button press from the Operator.

The third issue has to do with the TDFW pump M/A stations SK-0509B & C. When either of those has been in MANUAL, their output may have been put at a value not the same as that of the Master Speed controller (SK-0509A). Returning to AUTO must result in SK-509B or C going to the same output as the Master, minus any bias dialed on the setpoint pot by the Operator. When this happens in the real plant equipment, upon return to Auto, the difference will decay away in a fashion resembling an RC time constant curve. The time constant is dependent on a jumper and the Reset thumbwheel setting on the Controller card (SC-0509B & C). At present, this time constant is in the 30 to 45 second range. The exact response can be supplied to Simulator modelers quite easily. This decaying away of the difference is to smooth transfer from MANUAL to AUTO modes, since normal bumpless transfer is not possible with the arrangement of those controllers (SC-0509B & C).

On the Simulator, when either of those M/A stations is switched to Manual, their output is simply snapping immediately to the output of the Master station, which is incorrect. In the past, before being corrected with the Reset switch setting, this triggered very noticeable oscillations of the speed of both turbine driven pumps, which may or may not have settled out without Operator intervention.

Immediate actions taken:

Talked to [REDACTED], talked to [REDACTED]

Recommended Actions:

Correct the modeled behavior to make Operator training accurately reflect plant.

Why did the condition happen?

The training Simulator is only as accurate as the knowledge of the people who program it.

What are the consequences?

Inaccurate paradigms about how the real plant will respond to Operator intervention of controls, perhaps causing us to choose a poor option in response to a situation.

As mentioned earlier, this false belief about how the Main Feed Reg Valve M/A stations respond may be at the bottom of why Braidwood chooses the "T2" Manual behavior and Byron chooses the "linear" Manual behavior (20 seconds versus 6 seconds--see the other mentioned IRs).

List of knowledgeable individuals:

[REDACTED]

Operable Basis:

Reportable Basis:

SOC Reviewed by: [REDACTED]

SOC Comments:

Send to Training for Actions. dd 05/13/09 Include Braidwood Station input on this issue. SOC 051409

*

Simulator fidelity is an important issue. Recommend a WGE to Training to evaluate this issue and determine additional actions as needed. It is recommended that Braidwood take part in the evaluation such that the two stations take the same actions and the potential concerns regarding the Main Feed Reg Valve M/A stations is properly resolved. Good catch to Chris Harrison.

*

Feedback from [REDACTED] is as follows "The training items should come to training for action. A Simulator Work request needs to be written to investigate and/or improve response, or a Plant/Simulator difference be documented. Rich".

dd 05/13/09

Manager review performed by: [REDACTED]

Manager Comments:

Concur with action to create simulator work request.

*

Per MRC 5-19-09

Create Action to address simulator training needs.

Dynamic AR Attributes

GOOD CATCH: [REDACTED]

Trend Codes

TC1	TC2	TC3	Proc	Org	Rank
ETR104	*	*	TQ51	*	

Assignments

Assign #: 01 **Assigned To:** **Status:** COMPLETE
Aff Fac: Byron **Prim Grp:** ACAPALL **Due Date:** 05/29/2009
Assign Type: TRKG **Sec Grp:** **Orig Due Date:** μμ/μμ/μμμμ
Priority:
Schedule Ref:
Unit Condition:
Subject/Description: TRAINING SIM M/A STATIONS BEHAVIOR NOT MODELED PROPERLY-3 IS

Assign #: 02 **Assigned To:** BYRNH **Status:** COMPLETE
Aff Fac: Byron **Prim Grp:** A8861TROPP **Due Date:** 06/05/2009
Assign Type: ACIT **Sec Grp:** **Orig Due Date:** 06/05/2009
Priority:
Schedule Ref:
Unit Condition:
Subject/Description: Create Simulator Work Request(s) to ...investigate and/or improve response as described in the IR, or a Plant/Simulator difference be documented. Document SWR

numbers and/or resolution.

Assign #:	<u>03</u>	Assigned To:	BYRNH	Status:	COMPLETE
Aff Fac:	Byron	Prim Grp:	A8861TR	Due Date:	06/02/2009
Assign Type:	ACIT	Sec Grp:		Orig Due Date:	06/02/2009
Priority:					
Schedule Ref:					
Unit Condition:					
Subject/Description:	Address simulator training needs				

Byron NRC Exam Applicants' Questions and Answers

Question 10 [REDACTED]

Applicant question:

Are you asking if the reactor trip is based ONLY on what happened to RCP 1D or on overall plant response?

Proctor response:

Consider the plant response ONLY to the RCP 1D trip.

Justification for response:

The bus that was de-energized is a power supply to 2 of 4 CD/CB pumps and the Startup Feedwater pump, so if the applicant assumed that equipment was being operated, the plant would trip on a loss of feedwater. The intent of the question is to test RPS interlocks for a loss of RCS flow, and the response did not cue the applicant to the correct answer.

Question 13 [REDACTED]

Applicant question:

Provide noun names for the valves listed in question number 13.

Proctor response:

1SX147B 1B CNMT Chiller SX Bypass Valve
1WO006B 1B & 1D RCFC CLG Coils Inlet Header Outside CNMT Isol Valve
1WO006A 1A & 1C RCFC CLG Coils Inlet Header Outside CNMT Isol Valve
1WO056A 1A & 1C RCFC CLG Coils Outlet Header Inside CNMT Isol Valve
1WO056B 1B & 1D RCFC CLG Coils Outlet Header Inside CNMT Isol Valve

Justification for response: The facility does not expect the applicants to know valves by valve number only.

Question 31 [REDACTED]

Applicant question:

Are any other alarms lit?

Proctor response:

Only if the alarm is expected as a result of the stated conditions.

Justification for response:

This response was from Appendix E, Part B 7: "For example, you should not assume that any alarm has actuated unless the question so states or the alarm is expected to activate as a result of the conditions that are stated in the question."

Byron NRC Exam Applicants' Questions and Answers

Question 33 [REDACTED]

Applicant question:

When was the deluge valve opened?

Proctor response:

All necessary information is provided in the question.

Justification for response:

Providing a specific time for the valve to be opened could have resulted in cueing the applicant to the correct answer, or even directing them away from the correct answer. No further information was needed to answer the question.

Question 36 [REDACTED]

Applicant question:

Does "tanks" in Choice D mean 2 separate tanks?

Proctor response:

All necessary information is provided in the question.

Justification for response:

Providing the information of "2 separate tanks" could have resulted in cueing the applicant to the correct answer, or even directing them away from the correct answer. No further information was needed to answer the question.

Question 49 [REDACTED]

Applicant question:

Does natural circulation flow refer to complete loop flow?

Proctor response:

Yes

Justification for response: The intent of the question and the K/A is to ask the effect of steam binding on natural circulation flow, not on reflux cooling. The clarification did not cue the student to the correct answer.

Byron NRC Exam Applicants' Questions and Answers

Question 53 [REDACTED]

Is the failure a fuse or just loss of air?

Proctor response:

Fuses are intact and the annunciator circuit has power available.

Justification for response: If a fuse was blown or power lost, a different answer would be correct. The applicant was not cued as to the correct answer, and they still must interpret the print in accordance with the supplied clarification.

Question 62 [REDACTED]

Applicant question:

Does the question ask what is happening automatically or what we have to take manual action on?

Proctor response:

Change stem to "...suppression will be AUTOMATICALLY actuated to..."

Justification for response:

The question requires knowledge of the Fire Protection automatic response, so the clarification was appropriate to prevent the applicant answering what could be manually operated.

Question 68 [REDACTED]

Applicant question:

Stated that both choices A & B are correct, as the reactor operator will perform followup steps of 1BEP-0 Attachment B with the procedure in hand.

Proctor response:

Answer the question "in accordance with OP-AA-101-111".

Justification for response: The question was stated in accordance with OP-AA-101-111. Also, Attachment B is NOT performed unilaterally by the reactor operator-the Unit Supervisor directs the reactor operator to perform that attachment.

Question 74 [REDACTED]

Applicant question:

Is 1BFR S.I a typographical error?

(Choice C referred to 1BFR S.I ; "I" was san-serif)

Proctor response:

Correct to 1BFR S.1.

Byron NRC Exam Applicants' Questions and Answers

Question 86 [REDACTED]

Applicant question:

Is it safe to assume all equipment actuated as required? Based on CNMT pressure of 22 psig.

Proctor response:

All necessary information is provided in the question.

Justification for response:

Applicants were read Appendix E and needed to evaluate equipment operation based on the conditions of the question.

Question 87 [REDACTED]

Applicant question:

Are we to assume only Bus 141 lost offsite power?

Proctor response:

All necessary information is provided in the question.

Justification for response:

Applicants were read Appendix E and needed to evaluate equipment status based on the conditions of the question.

BYRON NRC WRITTEN EXAM
OCTOBER 8, 2010

FRONT OF ROOM

PROCTOR TABLE

[REDACTED] (RO)

[REDACTED] (SRO)

[REDACTED] (SRO)

[REDACTED] (SRO)

[REDACTED] (RO)

[REDACTED] (SRO)

BACK OF ROOM