

Individual Examination Report  
PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY

U.S. Nuclear Regulatory Commission Individual Examination Report					
Applicant's Name [REDACTED]			Docket Number [REDACTED]		
I	R	Examination Type (Initial or Retake)	Facility Name: Vogtle		
X		Reactor Operator	Facility Description	X	Hot
		Senior Reactor Operator (SRO) Instant			Cold
		SRO Upgrade			BWR
		SRO Limited to Fuel Handling		X	PWR

Written Examination Summary					
NRC Author/Reviewer: M. Meeks			RO/SRO/Total Exam Points 75		
NRC Grader/Reviewer: M. Meeks			Applicant Points 66		
Date Administered: April 20, 2012			Applicant Grade (%) 88.00		
Operating Test Summary					
Administered by: P. Capehart			Date Administered: March 26–April 13, 2012		
Walk-Through (Overall)				S	
Administrative Topics				S	
Simulator Operating Test				S	
Examiner Recommendations					
Check Blocks	Pass	Fail	Waive	Signature	Date
Written Examination	X			<i>Michael Meeks</i> M. Meeks	05/10/2012
Operating Test	X			<i>P. Capehart</i> P. Capehart	05/10/2012
Final Recommendation	X			<i>Malcolm T. Widmann</i> M. Bates / M. Meeks	10 MAY 2012 05/10/2012
License Recommendation					
<input checked="" type="checkbox"/>	Issue License	Supervisor's Signature <i>Malcolm T. Widmann</i> Malcolm T. Widmann			Date
<input type="checkbox"/>	Deny License				05/10/12

**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY**

Applicant Docket Number [REDACTED]		
<b>Walk-Through Grading Details</b>	<b>Evaluation (S or U)</b>	<b>Comment Page Number</b>
<b>Administrative Topics</b>		
a. Perform AFD Monitoring (Administered by M. Meeks)	S	
b. $K_{eff}$ Determination for Shutdown Banks Withdrawn (Administered by M. Meeks)	S	
c. Determine Tagging Requirements (Administered by M. Meeks)	S*	4
d. Determine if Task Can Be Completed Without Exceeding any Radiological Limits (Administered by M. Meeks)	S	
e. N/A	N/A	
<b>Systems: Control Room</b>		
a. Control Rod Operability Test (Administered by M. Meeks)	S	
b. Transfer ECCS Pumps to Cold Leg Recirc (Administered by M. Meeks)	S*	5
c. Depressurize RCS to Reduce Break Flow to Ruptured SG (Administered by P. Capehart)	S	
d. Start an RCP with subsequent Seal Failure (Administered by M. Bates)	S*	6
e. Transfer AFW Suction Source to CST 2	S	
f. Dilute Containment with Service Air (Administered by M. Meeks)	S	
g. Return ESF Bus from Diesel Generator to Normal Supply (Administered by M. Meeks)	S*	7
h. Manually Actuate CRI due to Smoke	S*	8
<b>Systems: In-Plant</b>		
i. Establish RWST Gravity Drain Through RHR Pumps to HLs (Administered by M. Bates)	S	
j. Establish Local Control of 1E Switchgear	S	
k. Placing the RHR 25kVA Inverter 1DD116 in Service (Administered by M. Bates)	S*	9

**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY**

Applicant Docket Number: <span style="background-color: black; color: black;">XXXXXXXXXX</span>					
<b>Reactor Operator Simulator Operating Test Grading Details</b>					
Competencies/ Rating Factors (RFs)	RF Weights	RF Scores	RF Grades	Comp. Grades	Comment Page No.
1. Interpretation/Diagnosis a. Recognize & Verify Status b. Interpret & Diagnose Conditions c. Prioritize Response	0.40 0.30 0.30	3 3 3	1.20 0.90 0.90	3.00	
2. Procedures/Tech Specs a. Reference b. Procedure Compliance c. Tech Spec Entry	0.30 0.40 0.30	3 3 3	0.90 1.20 0.90	3.00	
3. Control Board Operations a. Locate & Manipulate b. Understanding c. Manual Control	0.40 0.30 0.30	2 2 3	0.80 0.60 0.90	2.30	10 11
4. Communications a. Provide Information b. Receive Information c. Carry Out Instructions	0.34 0.33 0.33	3 3 3	1.02 0.99 0.99	3.00	

[Note: Enter RF Weights (nominal, adjusted, or "0" if not observed (N/O)), RF Scores (1, 2, 3, or N/O), and RF Grades from Form ES-303-4 and sum to obtain Competency Grades.]

**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY****APPLICANT DOCKET NUMBER** [REDACTED]**CROSS REFERENCE:**

Administrative Topic "c"

**JPM/TASK:**

Determine Tagging Requirements.

**EXPECTED ACTION/RESPONSE:**

Given the appropriate references, the applicant was expected to correctly determine the appropriate boundary points and required positions of components to (1) isolate the fluid boundary and (2) drain the "A" Containment Spray Pump (CSP), 1-1206-P6-001, in preparation for maintenance on the pump seals. The applicant was expected to identify 1-1206-U4-002, CSP A Suction Floor Drain Isolation, as a required drain path to be tagged in the OPEN position. Proper tagging of 1-1206-U4-002 was not a critical step in the JPM.

**APPLICANT ACTION/RESPONSE:**

When the applicant developed the tagout, the applicant incorrectly stated that 1-1206-U4-002 should be tagged in the CLOSED position.

During post-JPM discussion with the examiner, the applicant incorrectly stated that valve -002 was an isolation boundary that was required to be tagged in a closed configuration. However, the applicant correctly performed all critical steps in the JPM. Therefore, the applicant was evaluated as successfully completing the JPM.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a lack of knowledge of tagging and clearance procedures.

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**APPLICANT DOCKET NUMBER** [REDACTED]**CROSS REFERENCE:**

Systems: Control Room "b"

**JPM/TASK:**

Transfer ECCS Pumps to Cold Leg Recirculation.

**EXPECTED ACTION/RESPONSE:**

The applicant was directed to transfer ECCS pumps to cold leg recirculation using procedure 19013-C, "ES-1.3 TRANSFER TO COLD LEG RECIRCULATION." However, per the design of the JPM, "A" train RHR suction valve HV-8812A (RWST TO RHR PMP-A SUCTION) fails to close, and "B" train RHR suction valve HV-8811B (SNMT SUMP TO RHR PMP-B SUCTION) failed to open. Based on this system configuration, alignment for cold leg recirculation was not possible and a transition to 19111-C, "ECA-1.1 LOSS OF EMERGENCY COOLANT RECIRCULATION," was required at RNO step 3.e of Attachment A to 19013-C.

As the applicant worked through Attachment A of procedure 19013-C, it was a critical step in the JPM to secure the "A" RHR pump when it was determined that HV-8812A would not close. It was a critical step in the JPM to secure the "B" RHR pump at step RNO 3.b.\_1) of Attachment A at the first procedural check for HV-8811B being open, and it was a critical step in the JPM to not re-start the "B" RHR pump (which would not have a suction source) at step RNO 3.b.\_4). The applicant was expected to correctly follow procedural rules of usage and continue with step RNO 3.b.\_5), which directed the operator to perform step 3.d. The applicant was then expected to perform step 3.d and ultimately RNO step 3.e, which directed the required transition to 19111-C. Determining that a transition to 19111-C was required was also a critical step in the JPM.

**APPLICANT ACTION/RESPONSE:**

During the JPM, the applicant correctly determined that HV-8811B would not open, and also correctly determined that the "B" RHR pump should not be started. However, at this point the applicant basically stopped performing procedure 19013-C, looked back at previous procedural steps and forward at potentially upcoming procedural steps, and then notified the examiner that a transition to 19111-C was required based on a loss of recirculation capability.

During post-JPM questions with the examiner, the examiner asked the applicant to go back over the procedural sequence of RNO step 3.b. During this discussion, the applicant recognized that the procedure also directed a transition to 19111-C, and stated that he should have performed steps 3.d. and 3.e instead of independently recommending a transition to 19111-C. However, the applicant correctly performed all critical steps in the JPM. Therefore, the applicant was evaluated as successfully completing the JPM.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a lack of ability to interpret and execute procedure steps.

**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY**  
**APPLICANT DOCKET NUMBER [REDACTED]**

**CROSS REFERENCE:**

Systems – Control Room “d”

**JPM/TASK:**

Start an RCP with subsequent Seal Failure

**EXPECTED ACTION/RESPONSE:**

The applicant was expected to perform alarm panel checks as part of verifying no applicable alarms being lit prior to starting the RCP.

**APPLICANT ACTION/RESPONSE:**

The applicant did not perform alarm panel checks as part of verifying applicable alarms not lit.

The applicant’s performance was rated as satisfactory because performing alarm panel checks was not a critical step.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a weakness in thoroughly performing a procedure step that required a verification of applicable alarms not being lit.

**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY****APPLICANT DOCKET NUMBER** [REDACTED]**CROSS REFERENCE:**

Systems: Control Room "g"

**JPM/TASK:**

Returning ESF Bus from Diesel Generator to Normal Supply.

**EXPECTED ACTION/RESPONSE:**

The applicant was directed to parallel RAT "B" to bus 1BA03, and then remove DG1B from bus 1BA03 in accordance with procedure 13427B-1, "4160V AC BUS 1BA03 1E ELECTRICAL DISTRIBUTION SYSTEM." At step 4.2.5.1 of this procedure, the applicant was expected to lower DG1B load to 3000 kW in maximum increments of 1000 kW and 500 kVAR in time increments of 5 minutes. When the applicant reached step 4.2.5.1, the diesel would be running with ~3250 kW load and ~300 kVARs lagging. Step 4.2.5.2 of the procedure directs the operator to concurrently unload the D/G to 700 kW and 200-300 kVARs lagging after the diesel load has been stable at 3000 kW for a 5 minute period. None of the above-mentioned steps in the procedure were critical steps in the JPM.

**APPLICANT ACTION/RESPONSE:**

During the JPM, when the applicant performed step 4.2.5.1 of the procedure to unload the diesel, he lowered load from ~3200 kW to ~2100 kW and then waited 5 minutes. This was incorrect because diesel load was lowered below ~3000 kW.

During post-JPM questions with the examiner, the examiner asked the applicant to go back through the procedural steps of 4.2.5.1 and 4.2.5.2. At this time, the applicant stated that he should have only lowered load to 3000 kW instead of 2100 kW, and that he realized the mistake when he turned the page and read step 4.2.5.2. However, the applicant correctly performed all critical steps in the JPM. Therefore, the applicant was evaluated as successfully completing the JPM.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a lack of ability to interpret and execute procedure steps.

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**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY**  
**APPLICANT DOCKET NUMBER [REDACTED]**

**CROSS REFERENCE:**

Systems – Control Room “h”

**JPM/TASK:**

Manually Align CRI due to Smoke Entering MCR Air Intakes

**EXPECTED ACTION/RESPONSE:**

The applicant was expected to manually actuate control room isolation per 13301-C, “CBCR Normal HVAC and Emergency Filtration System”. Specifically, at step 4.4.1.7, the applicant was expected to “Verify that the CR FILTER UNIT OUTLET AIR DMPR on the **running** train (Train B: 1-HV-12129) is open”. The “B” Train was the only running train.

**APPLICANT ACTION/RESPONSE:**

At step 4.4.1.7, the applicant asked for indications for both Train A and Train B, as opposed to asking for indications only for the “B” train as expected. When asked, the applicant was informed that Train A CR FILTER UNIT OUTLET AIR DMPR indicated closed. The applicant failed to properly identify the **running** train.

The applicant's performance was rated as satisfactory because he successfully completed all critical steps.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a weakness in the ability to correctly use procedures.



**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY**  
**APPLICANT DOCKET NUMBER [REDACTED]**

**CROSS REFERENCE:**

Systems – In-Plant “k”

**JPM/TASK:**

Placing the RHR 25kVA Inverter 1DD1I6 in Service

**EXPECTED ACTION/RESPONSE:**

The applicant was expected to check proper inverter operation by observing 480 VAC on all three inverter output voltmeters in accordance with 13405-1, 125V DC 1E Electrical Distribution System, Rev 41.2, Step 4.1.11.2 (g).

The applicant was also expected to direct installation of the annunciator card associated with ALB34-E07 and check that the alarm was lit in accordance with 13011-1, Residual Heat Removal System, Rev 69, Step 4.4.3 (b).

**APPLICANT ACTION/RESPONSE:**

The applicant only verified 480 VAC on one of the three phases of the inverter output voltmeter.

The applicant also did not initially verify that the annunciator card associated with ALB34-E07 had been installed and that the alarm was lit. However, the applicant did recognize his error after completing the task and at that time directed the installation of the annunciator card. The applicant stated that he had thought that he had already performed those actions in accordance with a previous procedure step, but then he recognized that the previous step was associated with ALB34-~~E~~07 rather than ALB34-E07.

The applicant's performance was rated as satisfactory because he completed all critical steps correctly. Verifying voltage on all three phases was not a critical step and installation of the annunciator card associated with ALB34-E07 was also not a critical step.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a weakness in his ability to locate local voltage indications as well as a weakness in his ability to correctly complete procedure steps.

**PRIVACY ACT INFORMATION - FOR OFFICIAL USE ONLY**  
**APPLICANT DOCKET NUMBER** [REDACTED]

**CROSS REFERENCE:**

3.a: Control Board Operations – Locate & Manipulate

**SCENARIO/EVENT:**

Scenario 7, Event 6: RWST Sludge Mixing Line Pipe Break With Failure to Automatically Isolate

**EXPECTED ACTION/RESPONSE:**

The applicant, as UO, was expected to respond to a RWST Low Level Alarm in accordance with alarm response procedure ALB06-E04, recognize that the automatic action for the RWST Sludge Mixing Tank did not occur and take manual action to shut the RWST Sludge Mixing Isolation Valve(s) on the QPCP.

**APPLICANT ACTION/RESPONSE:**

The applicant pulled the associated alarm response procedure for ALB06-E04 but failed to recognize that the associated valves listed to close as an automatic action were located in the Control Room on the QPCP. The entire crew, including the applicant, allowed the RWST leak to continue for approximately 11 minutes when the only action required to isolate the leak was closing the sludge mixing isolation valves, which should have been verified closed as part of performing the alarm response procedure associated with ALB06-E04. On a follow-up question, the applicant identified that he was not sure if the valves were located in the control room.

The applicant made one error in this rating factor; therefore, a score of "2" was assigned.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a weakness in locating the sludge mixing isolation valves.

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**APPLICANT DOCKET NUMBER [REDACTED]**

**CROSS REFERENCE:**

3.b: Control Board Operations – Understanding

**SCENARIO/EVENT:**

Scenario 3, Event 5: Main Turbine EHC Pump Tripped and Standby Pump Failed to Auto Start

**EXPECTED ACTION/RESPONSE:**

The applicant, as UO, was expected to recognize that the running EHC pump had tripped, respond initially in accordance with ALB33-B07 489V SWGR 1NB02 TROUBLE alarm to diagnose the pump failure and then provide input to the SRO as to the status of the standby pump and when it would auto start.

**APPLICANT ACTION/RESPONSE:**

The applicant identified the failure of the running EHC pump. The applicant failed to supply any additional information to the SRO or correct the SRO when he identified that the standby EHC pump failed to start. Prior to receiving ALB20-D05 HYD FLUID LO PRESS alarm, the SRO directed the standby EHC pump to be started. The applicant failed to recognize that this annunciator response procedure provided information as to when the low pressure alarm is received (1600 psig) and when the standby EHC will receive an automatic start (1400 psig). The applicant also failed to provide detailed information as to the rate of EHC pressure decrease to ensure that the SRO realized that it would take several minutes to receive the low pressure alarm and then several more minutes prior to an auto start on the standby EHC pump. The applicant was downgraded in this competency because he failed to understand the provide accurate EHC pressure information or identify the low pressure or auto start pressure setpoints for the standby EHC pump.

The applicant made only one error in this rating factor; therefore, a score of "2" was assigned.

**LACK OF ABILITY/KNOWLEDGE:**

The applicant demonstrated a weakness in his ability to deliver accurate EHC pressure data and annunciator procedure information for the SRO to adequately diagnosis plant conditions.

**Appendix D Scenario Outline Form ES-D-1**

Facility: Vogtle Scenario No.: 3 Op-Test No.: 2012-301

Examiners: Mark Bates Operators: [Redacted] (SRO) S  
Phil Capehart [Redacted] (LOTR) M  
N/A Surrogate (UO)

**Initial Conditions:** The plant is at 100% power, MOL, steady state operations.  
 (Base IC # 14, snapped to IC # 183 for HL17 NRC Exam)

**Equipment OOS:** Safety Injection Pump "A" is tagged out for motor repair.

**Turnover:** Maintain 100% power. Containment mini-purge is in service for a Containment entry on the next shift.

**Preloaded Malfunctions:**

**TU10B Main Turbine EHC Pump B Auto Start Failure**

**Overrides**  
**HS-3009 OPEN (Panel Map B-Left, HS-3009 LP-1 MS SPLY to AFW TD PMP-1 to OPEN)**

Event No.	Malif. No.	Event Type*	Event Description
T1	SG02D @ 100%	I-UO I-SS TS-SS	SG # 4 NR LT fails high (LT-554).  LCO 3.3.1 Condition A LCO 3.3.1 Condition A, FU 13 Condition E LCO 3.3.2 Condition A LCO 3.3.2 Condition A, FU 5c Condition I LCO 3.3.2 FU 6b Condition D
T2	CV08 @ 25%	C-OATC C-SS TS-SS	CVCS Letdown Leak ORC (Aux. Building – Isolable).
3	N/A	N-OATC N-SS	Places Excess Letdown in service.
T4	PR02A @ 100%.	I-OATC I-SS TS-SS	Controlling PRZR Pressure channel PT-455 fails high.  LCO 3.3.1 Condition A, FU 6 Condition E, LCO 3.3.1 FU 8a Condition M, LCO 3.3.1 FU 8b Condition E, LCO 3.3.2 Condition A, FU 1d Condition D, LCO 3.3.2 FU 8b Condition L (One hour action), LCO 3.4.1.a Condition A
T5	TU11	C-UO C-SS	Main Turbine EHC Pump A trips with failure of standby EHC pump to automatically start.

## Appendix D

## Scenario Outline

Form ES-D-1

Event No.	Malif. No.	Event Type*	Event Description
T6	SG01A @3%	R-OATC N-UO R-SS TS-SS	Steam Generator # 1 10 gpm SGTL requiring a rapid down power.  <b>LCO 3.4.13 Condition A</b>
T7	SG01A @ 45% Ramp 180 seconds	M-ALL	DBA SGTR on SG # 1 (~450 gpm)
8	Preload Critical	C-UO C-SS	TDAFW steam supply valve from SG # 1 will not manually close requiring closure of TDAFW Trip and Throttle valve to isolate SG # 1.
T9	PR07 @ 80% Critical	C-OATC C-SS	PRZR spray valve loop 4 fails 80% open after maximum rate depressurization of RCS when OATC attempts to shut the valve.
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

**Appendix D**

**Scenario Outline**

**Form ES-D-1**

Facility: Vogtle Scenario No.: 6 Op-Test No.: 2012-301

Examiners: Mark Bates Operators: [REDACTED] (SRO) S  
Michael Meeks [REDACTED] (OATC) U  
Phil Capelhart [REDACTED] (uo) M

**Initial Conditions:** The plant is at 100% power, BOL, steady state operations, control rods in automatic.  
 (Base IC # 10, snapped to IC # 186 for HL17 NRC Exam)

**Equipment OOS:** Safety Injection Pump "A" is tagged out for motor repair.

**Turnover:** The plant is at 100% power, Containment mini-purge is in service for a Containment entry on the next shift.

**Preloaded Malfunctions:**

**AC03B - ACCW Pump-2 Hand switch Auto Contact Failure**

**AF05A, B, C Failure of all AFW pumps to automatically start**

**ES01- Failure of Automatic Reactor Trip**

**ES02 - Failure of Manual Reactor Trip**

**TU18 - Auto Turbine Trip Failure**

**Overrides**

**Note to Simbooth:** Place Containment Mini-Purge in service.

Event No.	Malf. No.	Event Type*	Event Description
T1	AC02A	C-UO C-SS	ACCW Pump # 1 locked rotor with failure of the standby ACCW pump to automatically start.
T2	RC08A @ 100%	I-OATC I-SS TS-SS	RCP Loop 1 HL NR RTD fails high resulting in inward rod motion. <b>LCO 3.3.1, Condition A, FU 6, 7 Condition E and LCO 3.3.2 Condition A, FU 5b Condition I</b>
T3	RM-006	TS-SS	Cnmt Bldg Oper Lev Rad – hi Range, RE-006 fails to 100%. <b>LCO 3.3.3 Condition A, FU 14, Condition B</b>

## Appendix D

## Scenario Outline

Form ES-D-1

Event No.	Malif. No.	Event Type*	Event Description
T4	PR03A (56.5-0%) Ramp 600 sec	I-OATC I-SS  TS-SS	Controlling PRZR level channel LT-459 fails low over 10 minutes resulting in FIC-0121 raising charging flow.  <b>LCO 3.3.1 Condition A, FU 9, Condition M</b> <b>INFO LCO 3.3.3 FU 6</b> <b>LCO 3.3.4 Condition A, FU 8</b>
T5	FW14 @ 100% Ramp 60 Seconds	I-UO I-SS	FW pressure transmitter PT-508 fails slowly high resulting in MFPT speed reducing and lowering FW flows and SG levels.
6	N/A	R-OATC N-UO R-SS	Power reduction due to MFPT B high vibrations.
T7	EL06A	M-ALL	Loss of 13.8kV bus 1NAA resulting in loss of 2 RCPs and 2 Condensate Pumps, 1 circulating water pump - ATWT.
T8	RD07 with 69 sec delay	C-OATC C-SS <b>Critical</b>	ATWT – Auto rod motion fails after ~ 1 minute.
9	Preload	C-UO C-SS <b>Critical</b>	Turbine Auto Trip failure requiring Manual Trip.
10	Preload	C-UO C-SS <b>Critical</b>	MDAFW and TDAFW pumps fail to automatically start.
T11	MS06D @50%	CREW	Main Steam Safety for Loop # 4 fails 50% open requiring an eventual transition to E-2 to attempt to isolate the faulted SG # 4.
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

**Event 1:**

ACCW pump # 1 will trip due to a locked rotor and ACCW pump # 2 will fail to automatically start.

**Verifiable Actions:**

UO – Starts standby ACCW pump # 2.

**Technical Specifications:**

None

**Appendix D**

**Scenario Outline**

**Form ES-D-1**

Facility: Vogtle Scenario No.: 7 Op-Test No.: 2012-301

Examiners: Michael Meeks Operators: [Redacted] (SRo) U  
Mark Bates [Redacted] (OATC) S  
Phil Capelhart [Redacted] (uo) M

**Initial Conditions:** The plant is at 29% power, BOL, steady state operations, control rods in manual. (Base IC # 36, snapped to IC # 187 for HL17 NRC Exam)

**Equipment OOS:** Safety Injection Pump "A" is tagged out for motor repair.

**Turnover:** The plant is at 29% power, Containment mini-purge is in service for a Containment entry on the next shift, raise power at < 8% per hour.

**Preloaded Malfunctions:**

**ES19A – Block CVI Actuation Train A**

**ES19B - Block CVI Actuation Train B**

**ES10 - Train A Main Steam Line Isol Auto Actuation Failure**

**ES11 - Train B Main Steam line Isol Auto Actuation Failure**

**SI08A - RWST Sludge Mixing Valve 10957 Failure**

**SI08B - RWST Sludge Mixing Valve 10958 Failure**

**RD17D - (K-14) @ 36 steps**

**RD17H - (D-4) @ 24 steps**

**RD17L - (G-13) @ 30 steps**

**PR12B PORV 456 Block Valve 8000B Auto Closure Failure**

**Overrides**

**HV-8104 Emergency Borate valve shut.**

**Note to Simbooth:** Place Containment Mini-Purge in service.

Event No.	Malif. No.	Event Type*	Event Description
1	N/A	R-OATC R-SS N-UO	Raises power in accordance with UOP-12004-C.
T2	SG05D @100%	C-UO C-SS	SG # 4 Steam Flow indicator fails high.



<b>Appendix D</b>	<b>Scenario Outline</b>	<b>Form ES-D-1</b>
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Event No.	Malfunction No.	Event Type*	Event Description
T3	CV04	I-OATC I-SS	Loss of Cooling to Letdown Heat Exchanger (TE-0130 fails low)
T4	new malfunction (9)	TS-SS	NSCW Cooling Tower Fan # 1 on Train A trips with ambient wet-bulb temperature > 63°F  <b>LCO 3.7.9 Ultimate Heat Sink (UHS) Condition B</b>
T5	PR02B @100%	I-OATC I-SS  TS-SS	PRZR PT-456 fails high resulting in PORV 456 failing open and block valve HV-8000B failure to auto close.  <b>LCO 3.3.1 Condition A, FU 6 Condition E, LCO 3.3.1 FU 8a Condition M, LCO 3.3.1 FU 8b Condition E LCO 3.3.2 Condition A, FU 1d Condition D, LCO 3.3.2 FU 8b Condition L, LCO 3.4.1 Condition A</b>
T6	RF TK02 95-88% 1200 sec ramp	C-UO C-SS TS-SS	RWST sludge mixing line pipe break with auto closure failure.  <b>LCO 3.5.4 Condition B and Condition D (1 hour action) TR 13.1.7 Condition D (Immediate TR action)</b>
T7 10	FW04C Preload	C-OATC  C-OATC C-SS	MFRV # 3 fails shut, requiring reactor trip, 3 stuck rods.  Emergency borate due to 3 stuck rods with failure of HV-8104 to open.
T8	SG01C @45%	M-ALL	Ruptured Faulted SG IRC with failure of CVI to occur.
T9	FW06C @40%	M-ALL	Ruptured Faulted SG IRC with failure of CVI to occur.
11	Preload	C-UO C-SS <b>Critical</b>	CVI actuation failure requiring manual alignment.
12	Preload	C-UO C-SS <b>Critical</b>	Main Steam Line Auto Actuation Failure
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			