Final Submittal

TURKEY POINT DEC. 2003
EXAM 50-250/2003-301

DECEMBER *3* - 15,2003

FINAL SAMPLE PLANS / OUTLINES

Facility: Turkey Point Units 3 & 4	Date of Examination: December, 2003
Exam Level: SRO (I)	Operating Test Number: 1

Administrative Topic (See Note)	Describe activity to be performed
Conduct of Operations	G.2.1.7 (3.7/4.4) In preparation for a planned reactor power change, perform a reactivity management calculation to determine the correct volume of boric acid to be added to the RCS to achieve the desired power change. (M) (15 min.)
Conduct of Operations	G.2.1.12 (2.9/4.0) Evaluate the applicable Technical Specification(s) in the event of the unexpected outage of the Unit 4 Startup Transformer when Unit 4 is at 100% power and Unit 3 is in Mode 4. List all Limiting Conditions for Operations affected, Action Statement required operator responses, options and time limits. (N) (30 min.)
Equipment Control	G.2.2.18 (2.3/3.6) Determine Contingency Actions due to loss of a CCW pump during RCS reduced inventory operation and Phase II decay heat load conditions. (M) (15 min.)
Radiation Control	G 2.3.6 (2.1/3.1) Review for the purpose of approving a radioactive liquid release permit. Identify all of the embedded errors. (M) (15 min.)
Emergency Plan	G.2.4.40 (2.3/4.0) Review for the purpose of approving the Florida Nuclear Plant Emergency Notification Form. Identify all of the embedded errors. (M) (20 min.)

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.

Facility: Turkey Point Units 3 & 4 Date of Examination: December, 2003

Exam Level; SRO (I) **SRO (U)** Operating Test Number: **1**

Control Room Systems (8 for RO; 7 for SRO-I; **2 or 3 for SRO-U**)

Systems/JPM Title	Type Code*	Safety Function
a. 006/ Transfer to Alternate Hot Leg Recirculation (15 min.) (Based on HHSI Hot Leg path valve failure)	**(A) (S) (L) (D)**	2
b. 005/ Respond to Loss of Residual Heat Removal (30 min.) (RHR Pump Trip & FCV-605 failure)	(A) (S) (L) (M)	4
c. 004/ CVCS Respond to FCV-113A Failure During Boration (20 min.) (Requiring use of emergency boration valve)	(A) (S) (L) (M)	1
d. 010/ Respond to a Pressurizer Pressure Control Malfunction (10 min.) (PT-444 failure + spray valve stuck open requiring reactor trip)	(A) (S) (D)	3
e. 015/ Place Power Range N-44 in Service/Respond to loss of Power Range Channel N-44 (15 min.)	(A) (S) (N)	7
f. 061/ Shutdown 2 AFW Pumps with Start Signals Present While in the EOPs (25 min.)	**(A) (S) (D)**	4
g. 062/ Restore Power to 3D 4KV Bus (10 min.) (Restores degraded CCW System)	(S) (L) (N)	6
h.		
In-Plant Systems (3 for RO; 3 for SRO-I; **3 or 2 for SRO-U**)		
i. 028/ Locally Place Unit 4 Hydrogen Monitor in Service Post-LOCA (20 min.)	**(R) (M)**	5
j. 008/ Split CCW Headers in Response to Leakage on 4A CCW Header (20 min.)	**(R) (D)**	8
k. 062/ Respond to a Loss of Vital Instrument Bus 4P08 (Locally swap to spare inverter) (30 min.)	**(N)**	6

*Type Codes: ((D)irect from bank, (M)odifed from bank, (N)ew, (A)lternate Path, (C)control room, (S)imulator, (L)ow Power, (R)CA **Bold Print – JPMs performed by SRO-U**

Facility: Turkey Point Date of Exam: Dec. 3 - 15, 2003

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 *	~~Point~~ Total	K	A	A 2	G *	Total
1. Emergency & Abnormal Plant Evolutions	1	2	3	3				4	4			2	~~24~~18			3	4	7
	2	2	1	3				0	1			2	~~16~~9			2	3	5
	~~3~~												3					
	Tier Totals	4	4	6				4	5			4	~~43~~27			5	7	12
2. Plant Systems	1	2	1	3	4	2	3	3	1	3	3	2	~~19~~28		1	1	2	4
	2	2	0	1	0	2	0	0	2	1	1	2	~~17~~10			1	1	2
	~~3~~												~~4~~					
	Tier Totals	4	1 *	4	4	4	3	3	3	4	4	4	~~40~~38		1	2	3	6
3. Generic Knowledge and Abilities Categories					~~Cat~~ 1		~~Cat~~ 2		~~Cat~~ 3		~~Cat~~ 4		~~17~~10	1	2	3	4	7
					3		3		2		2			2	2	1	2	

Note:
1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding SRO sampling.
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 ~~100~~ 75 points and the SRO-only exam must total 25 points.
3. Select topics from many systems and evolutions; avoid selecting more than two ~~or three~~ K/A topics from a given system or evolution unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline
5. The shaded areas are not applicable to the category/tier.
6.* The generic (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. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the ~~SRO~~ applicable license level, and the point totals for each system and category. ~~K/As below 2.5 should be justified on the basis of plant-specific priorities.~~ Enter the group and tier totals for each category in the table above; summarize all the SRO-only knowledge and non-A2 ability categories in the columns labeled "K" and "A." Use duplicate pages for RO and SRO-only exams.

h. For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.

i. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

* less than 2 total after final submittal and review by licensee, NRC and licensee agree that overall balance is good and do not need to replace any other K/A with this one. TJK 12/3/03

75 Point

Tier 1 Group 1

Name / Safety Function:	K1	K2	K3	A1	A2	G	K/A Number	Question Type	K/A Topic	RO	SRO
Reactor Trip - Stabilization - Recovery / 1	0	1	0	0	0	0	007EK2.02	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.8)	Breakers, relays and disconnects	2.6	2.8
Pressurizer Vapor Space Accident / 3	0	0	0	0	0	1	~~008AG2.4.23~~ 008AG2.4.21	~~This is a Generic, no stem statement is associated.~~ see Form ES 401-4	~~Knowledge of the bases for prioritizing emergency procedure implementation during emergency operations.~~ Knowledge of parameters and logic used to assess the status of safety functions	~~2.8~~ 3.7	~~3.8~~ 4.3
Small Break LOCA / 3	0	0	0	0	0	0	009EA1.05	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	3.4	3.4
Large Break LOCA / 3	0	0	1	0	0	0	~~011EK3.07~~ 011EK3.02	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 45.6) see form ES-401-4	~~Stopping charging pump bypass flow.~~ RCS	~~3.5~~ 3.5	~~3.6~~ 3.7
RCP Malfunctions / 4	0	0	0	1	0	0	015AA1.22	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.6)	RCP seal failure/malfunction	4	4.2
Loss of Rx Coolant Makeup / 2	0	0	0	0	0	0	022AK1.02	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	K/A Randomly Rejected	2.7	3.1
Loss of RHR System / 4	0	0	1	0	0	0	005AK3.01	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 45.6)	Shift to alternate flowpath	3.1	3.4
Loss of Component Cooling Water / 8	0	0	0	0	0	0	026AK3.01	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 45.6)	K/A Randomly Rejected	3.2	3.5
Pressurizer Pressure Control System Malfunction / 3	0	1	0	0	0	0	027AK2.03 027AG2.2.15	Knowledge of the interrelations between (ABNORMAL PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.8) see form ES 401-4	Controllers and positioners Ability to identify & utilize as-built design	2.6 2.2	2.8 2.9

75 Point

Tier 1 Group 1

Name / Safety Function:	K1	K2	K3	A1	A2	G	K/A Number	Question Type	K/A Topic	RO	SRO
ATWS / 1	0	0	0	0	1	0	029EA2.05	Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	System component valve position indications	3.4	3.4
Steam Gen. Tube Rupture / 3	0	0	0	0	0	0	038EA2.07	Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	K/A Randomly Rejected	4.4	4.8
Steam Line Rupture - Excessive Heat Transfer / 4	0	0	0	1	0	0	040AA1.23	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.6)	All pressure gauges per steam generator (for pressure drop)	3.6	3.5
Loss of Main Feedwater / 4	1	0	0	0	0	0	054AK1.01	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	MFW line break depressurizes the S/G (similar to a steam line break)	4.1	4.3
Station Blackout / 6	0	0	0	0	1	0	055EA2.03	Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Actions necess to restore power	3.9	4.7
Loss of Off-site Power / 6	0	0	0	1	0	0	056AA1.24	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.6)	Plant computer to call up in-core temperature monitoring group	2.9	3
Loss of Vital AC Inst. Bus / 6	0	~~1~~ 0	0	0	~~0~~ 1	0	057AK2 ~~A1.01~~ 057AA2.19	~~Knowledge of the interrelations between (ABNORMAL PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.8)~~ Ability to determine and interpret the following Loss of vital AC (CFR: 43.5/45.13)	~~AC instrument bus alarms for the inverter and alternate power source~~ See form ES 401-4 Plant automatic actions that will occur on the loss of vital ac electrical instrument bus.	~~3.2~~ 4.0	~~3.7~~ 4.3
Loss of DC Power / 6	0	0	0	0	~~0~~ 1	~~1~~ 0	~~058AG2.2.3~~ 058AA2.03	~~This is a Generic, no stem statement is associated.~~ Ability to determine and interpret the following on Loss of DC power (CFR: 43.5/45.1	~~(multi-unit) Knowledge of the design, procedural and operational differences between units~~ See Form ES 401-4 DC loads lost; impact on ability to operate and monitor plant systems	~~3.1~~ 3.5	~~3.0~~ 3.9
Loss of Nuclear Svc Water / 4	0	0	1	0	0	0	062AK3.03	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 45.5)	Guidance actions contained in EOP for Loss of nuclear service water	4	4.2

75 Point

Tier 1 Group 1

Name / Safety Function:	K1	K2	K3	A1	A2	G	K/A Number	Question Type	K/A Topic	RO	SRO
Loss of Instrument Air / 8	0	0	0	0	0	0	065AK3.03	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 45.6)	K/A Randomly Rejected	2.9	3.4
						1	56562.1.6		Ability to supervise and assume a managerial role during plant transients and upset conditions	2.1	4.3
LOCA Outside Containment / 3	0	0	0	0	0	1	~~WE04EG2.4~~	This is a Generic, no stem statement is associated.	~~Knowledge of fire protection procedures.~~	~~2.9~~	~~3.4~~
	See form ES 401-4						25 WE04EG2.4 IR	Knowledge of the specific bases of EOP's.		2.7	3.6
Loss of Emergency Coolant Recirc. / 4	1	0	0	0	0	0	WE11EK1.2	Knowledge of the operational applications of the following concepts as they apply to the EMERGENCY PLANT EVOLUTION):(CFR: 41.8 to 41.10)	Normal, abnormal and emergency operating procedures associated with (Loss of Emergency Coolant Recir).	3.6	4.1
Steam Line Rupture - Excessive Heat Transfer / 4	0	1	0	0	0	0	WE12EK2.2	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.8)	Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems and relations between the proper operation of these systems to the operation of the facility.	3.8	3.9
Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	0	0	0	1	0	0	WE05EA1.1	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION) (CFR: 41.7 / 45.6)	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.	4.1	4.0

75 Point T

Tier 1 Group 2

Name / Safety Function:	K1	K2	K3	A1	A2	G	K/A Number	Question Type	~~K/A~~ Topic	RO	SRO
Continuous Rod Withdrawal / 1	0	0	0	0	0	0	001AK1.03	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	K/A Randomly Rejected	3.9	4
Dropped Control Rod / 1	0	0	0	0	0	0	003AK3.06	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 45.6)	K/A Randomly Rejected	3.1	4.2
Inoperable/Stuck Control Rod / 1	0	0	0	0	0	0	005AK3.05	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 45.6)	K/A Randomly Rejected	3.4	4.2
Emergency Boration / 1	0	0	0	0	1	0	024AA2.06	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	When boron dilution is taking place	3.6	3.7
Pressurizer Level Malfunction / 2	0	0	0	0	0	1	028AG2.4.31	This is a Generic, no stem statement is associated.	Knowledge of annunciators alarms and indications and use of the response instructions.	3.3	3.4
Loss of Source Range NI / 7	1	0	0	0	[illegible]	0	032AK1.01	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	Effects of voltage changes on performance	2.5	3.1
Loss of Intermediate Range NI / 7	0	0	0	0	0	0	033AK3.02	Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 45.6)	K/A Randomly Rejected	3.6	3.9
Fuel Handling Accident / 8	0	0	0	0	0	0	036AK1.03	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	K/A Randomly Rejected	4	4.3
Steam Generator Tube Leak / 3	0	0	0	0	0	0	037AA2.13	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	K/A Randomly Rejected	4.1	4.3

75 Point

Tier 1 Group2

Name / Safety Function:	K1	K2	K3	A1	A2	G	K/A Number	Question Type	K/A Topic	RO	SRO
Loss of Condenser Vacuum / 4	0	0	0	0	0	1	051AG2.2.2	This is a Generic no stem statement is associated.	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	4	3.5
Accidental Liquid RadWaste Rel. / 9	0	0	0	0	0	0	059AA1.01	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	3.5	3.5
Accidental Gaseous Radwaste Rel. / 9	0	0	0	0	0	0	060AA2.04	Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	K/A Randomly Rejected	2.6	3.4
ARM System Alarms / 7	0	0	0	0	0	0	061AK1.01	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	K/A Randomly Rejected	2.5	2.9
Plant Fire On-site / 9 8	1	0	0	0	0	0	067AK1.02	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	Fire fighting	3.1	
Control Room Evac. / 8	0	0	0	0	0	0	068AK1	Knowledge of the operational applications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10)	K/A Randomly Rejected	0	0
Loss of CTMT Integrity / 5	0	0	0	0	0	0	069AA1.03	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	2.8	3
Inad. Core Cooling / 4	0	0	0	0	0	0	074EA1.15	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	3.9	4.1
						1	074EG2.4.16	Knowledge of EOP implementation hierarchy and coordination with other support procedures.	Randomly selected	3.0	4.0
High Reactor Coolant Activity / 9	0	0	0	0	0	0	076AA1.04	Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	3.2	3.4

75 Point

Tier 1 Group 2

Name / Safety Function:	K1	K2	K3	A1	A2	G	K/A Number	Question Type	K/A Topic	RO	SRO
Rediagnosis / 3	0	0	0	0	0	0	WE01EA1.2	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	3.3	3.6
Steam Generator Over-pressure / 4	0	0	0	0	0	0	WE13EA1.1	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	3.1	3.3
Containment Flooding / 5	0	0	0	0	0	0	WE15EK3.1	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 45.6)	K/A Randomly Rejected	2.7	2.9
High Containment Radiation / 9	0	0	0	0	0	0	WE16EK2.2	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.8)	K/A Randomly Rejected	2.6	3.0
SI Termination / 3	0	0	1	0	0	0	WE02EK3.[illegible]	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 45.6)	RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.	3.5	3.8
LOCA Cooldown - Depress. / 4	0	0	0	0	0	0	WE03EG2.1	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	2.5	3.3
Natural Circ. / 4	0	0	0	0	0	0	WE09EK3.1	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 45.6)	K/A Randomly Rejected	3.3	3.6
Natural Circ. With Seam Void/ 4	0	1	0	0	0	0	WE10EK2.2	Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.8)	Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems and relations between the proper operation of these systems to the operation of the facility.	3.6	3.9
RCS Overcooling - PTS / 4	0	0	1	0	0	0	WE08EK3.2	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 45.6)	Normal, abnormal and emergency operating procedures associated with (Pressurized Thermal Shock).	3.6	4.0

75 Point

Tier 1 Group 2

Name / Safety Function:	K1	K2	K3	A1	A2	G	K/A Number	Question Type	K/A Topic	RO	SRO
Degraded Core Cooling / 4	0	0	0	0	0	0	WE08EA1.2	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.7 / 45.5)	K/A Randomly Rejected	3.5	3.8
Saturated Core Cooling Core Cooling / 4	0	0	0	0	0	0	WE07EA1.1	Ability to operate and / or monitor the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.7 / 45.6)	K/A Randomly Rejected	3.6	3.6
Loss of CTMT integrity / 5	0	0	1	0	0	0	WE14EK3.3	Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 45.6)	Manipulation of controls required to obtain desired operating results during abnormal and emergency situations.	3.5	3.5

75 Point

Tier 2 Group 1

Name / Safety Function:	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Number	Question Type	K/A Topic	RO	SRO
Reactor Coolant Pump	0	0	1	0	0	0	0	0	0	0	0	003K3.04	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.4)	RPS	3.9	4.2
Chemical and Volume Control		0	0	0	0	0	0	0	0	1	0	004A1.04 (see form ES401-4)	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8) Ability to predict and/or monitor changes in parameters associated with CVCS controls (CFR 41.5/45.5)	CVCS letdown orifice isolation valve and valve control switches PZR pressure & level	3.1 3.9	2.8 4.1
Residual Heat Removal	0	0	0	0	0	0	0	0	0	1	0	005A4.02	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Heat exchanger bypass flow control	3.4	3.1
Emergency Core Cooling	0	0	0	0	0	1	0	0	0	0	0	006K6.03	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Safety Injection Pumps	3.6	3.9
Pressurizer Relief/Quench Tank	0	0	0	0	0	0	1	0	0	0	0	007A1.01	Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	Maintaining quench tank water level within limits	2.9	3.1
Component Cooling Water	1	0	0	0	0	0	0	0	0	0	0	008K1.04	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	RCS, in order to determine source(s) of RCS leakage into the CCWS	3.3	3.3
Pressurizer Pressure Control	0	1	0	0	0	0	0	0	0	0	0	010K2.02	Knowledge of electrical power supplies to the following:(CFR: 41.7)	Controller for PZR spray valve	2.5	2.7
Reactor Protection	0	0	0	0	0	0	0	0	0	0	1	012G2.1.33	This is a Generic, no stem statement is associated.	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	4.0
Engineered Safety Features Actuation	0	0	0	0	0	1	0	0	0	0	0	013K6.01	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Sensors and detectors	2.7	3.1

75 Point

Tier 2 Group 1

Name / Safety Function:	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Number	Question Type	K/A Topic	RO	SRO
Containment Cooling	0	0	0	0	0	0	0	0	0	1	0	022A4.03	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Dampers in the CCS	3.2	3.2
Ice Condenser	0	0	0	0	0	0	0	0	0	0	0			K/A Rejected	0	0
Containment Spray	0	0	0	1	0	0	0	0	0	0	0	026K4.04	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41	Reduction of temperature and pressure in containment after a LOCA by condensing steam, to reduce radiological hazard and protect equipment from corrosion damage (spray)	3.7	4.1
Main and Reheat Steam	1	0	0	0	0	0	0	0	0	0	0	039K1.09	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	RMS	2.7	2.7
Condensate	0	0	0	0	0	0	0	0	0	0	1	056G2.1.2	This is a Generic, no item statement is associated.	Knowledge of operator responsibilities during all modes of plant operation.	3.0	4.0
Main Feedwater	1	0	0	1	0	0	0	0	0	0	0	059K4.16	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Automatic trips for MFW pumps	3.1	3.2
Auxiliary/Emergency Feedwater	0	0	0	0	0	1	0	0	0	0	0	061K6.02	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Controllers and positioners	2.5	2.8
AC Electrical Distribution	0	0	0	0	0	0	1	0	0	0	0	062A1.01	Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	Significance of D/G load limits	3.4	3.8
DC Electrical Distribution	0	0	1	0	0	0	0	0	0	0	0	063K3.02	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.4)	Components using DC control power	3.5	3.7

75 Point T

Tier 2 Group 1

Name / Safety Function:	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Number	Question Type	K/A Topic	RO	SRO
Emergency Diesel Generator	0	0	0	0	0	0	0	0	1	0	0	064A3.~~08~~ 07	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.7)	Functions (modes) of automatic transfer switch (to a startup bank)	4.0	4.0
												see form ES-401-4				
Process Radiation Monitoring	0	1	0	0	0	0	0	0	0	0	0	073K5.01	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.3)	Radiation theory, including sources, types, units and effects	2.5	3.0
Service Water	0	0	0	0	0	0	0	1	0	0	0	076A2.01	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 45.6)	Loss of SWS	3.5	3.7
Instrument Air	0	0	1	0	0	0	0	0	0	0	0	078K3.01	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.4)	Containment air system	3.1	3.4
Containment	0	0	0	0	0	0	0	0	1	0	0	103A3.01	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.7)	Containment isolation	3.9	4.2
AC Electrical Distribution	0	0	0	0	~~1~~ 0	0	0	0	~~0~~ 1	0	0	062K5 A3.04	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.3)	Operation of inverter (e.g. precharging synchronizing light, static transfer)	2.7	2.9
Instrument Air	0	0	0	1	0	0	0	0	0	0	0	078K4.02	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Cross-over to other air systems	3.2	3.5
Component Cooling Water	0	0	0	0	0	0	0	0	0	0	1	008G2.1.28	This is a Generic, no stem statement is associated.	Knowledge of the purpose and function of major system components and controls.	3.2	3.3
Main and Reheat Steam	0	0	0	0	1	0	0	0	0	0	0	039K5.01	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.3)	Definition and causes of steam/water hammer	2.9	3.1

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Tier 2 Group 1

Name / Safety Function:	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Number	Question Type	K/A Topic	RO	SRO
Auxiliary/Emergency Feedwater	0	0	0	0	0	0	1	0	0	0	0	061A1.01	Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	S/G pressure	3.3	3.6
Service Water	0	X 0	0	X 1	0	0	0	0	0	0	0	076K5 K4, o 2	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.3)	Automatic start features associated with SWS pump controls	2.9	3.2

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Tier 2 Group 2

Name / Safety Function:	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Number	Question Type	K/A Topic	RO	SRO
Hydrogen Recombiner and Purge Control	0	0	0	0	0	0	1	0	0	0	0	028A1.02	Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	Containment pressure	3.4	3.7
Containment Purge	0	0	0	0	0	0	0	0	1	0	0	029A2.01	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.7)	CPS isolation	3.8	4.0
Spent Fuel Pool Cooling	0	0	0	0	0	0	0	0	0	0	0	033G2.1.32	This is a Generic, no stem statement is associated	K/A Randomly Rejected	3.4	3.8
											1	033G2.1.32	(see Form ES-401-4)	Knowledge of the purpose and function of major system components and controls.	3.2	3.3
Fuel Handling Equipment	0	0	0	0	0	0	0	0	0	0	0	034A4.01	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	K/A Randomly Rejected	3.3	3.7
											1	034G2.1.7	← (see form ES 401-4) →	Ability to evaluate plant performance and make operational judgements	3.7	4.4
Steam Generator	0	0	0	0	0	0	0	0	0	0	0	035K5.01	Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.3)	K/A Randomly Rejected	3.4	3.9
Steam Dump/Turbine Bypass Control	0	0	0	0	0	0	0	1	0	0	0	041A2.03	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 45.6)	Loss of IAS	2.6	3.1
Main Turbine Generator	0	0	0	0	0	0	0	0	0	0	0	045K1.19	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	K/A Randomly Rejected	3.4	3.6
Condenser Air Removal	0	0	0	0	0	0	0	0	0	0	1	~~055G2.1.28~~	~~This is a Generic, no stem statement is associated.~~	~~Knowledge of the purpose and function of major system components and controls.~~	~~3.2~~	~~3.5~~
Liquid Radwaste	0	0	0	0	0	0	0	0	0	0	0	068A3.02	Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.7)	K/A Randomly Rejected	3.6	3.6

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Tier 2 Group 2

Name / Safety Function:	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Number	Question Type	K/A Topic	RO	SRO
Waste Gas Disposal	0	0	0	0	0	0	0	0	0	0	0	~~071K1.01~~ 071K1.06	~~Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 45.6)~~ physical connections	~~Loss of meteorological tower~~ ARM / PRM systems	~~2.5~~ 3.1	~~2.9~~ 3.1
Area Radiation Monitoring	0	0	0	0	0	0	0	0	0	0	0	072K5	Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	K/A Randomly Rejected	0	0
Circulating Water	0	0	0	0	0	0	0	0	0	0	0	075K2.03	Knowledge of electrical power supplies to the following:(CFR: 41.7)	K/A Randomly Rejected	2.8	2.7
Station Air	0	0	0	0	0	0	0	0	0	0	0	079K4.01	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	K/A Randomly Rejected	2.9	3.2
F	0	0	0	~~1~~ 0	~~0~~ 1	0	0	0	0	0	0	~~066K4.05~~ K5.04	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41. RANDOMLY CHANGED DUE TO NOT HAVING ENOUGH K5's	~~Halon~~	~~3.0~~ 2.9	~~3.4~~ 3.5
C D	0	0	1	0	0	0	0	0	0	0	0	001K3.01	Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.4)	CVCS	2.9	3.0
F	0	0	0	0	0	0	0	0	0	0	0	002K4.03	Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	K/A Randomly Rejected	2.9	3.2
Pressurizer Level Control	0	0	0	0	0	0	0	0	0	0	0	011K1.05	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	K/A Randomly Rejected	3.4	3.5
Rod Position Indication	0	0	0	0	0	0	0	0	0	0	0	014G2.1.30	This is a Generic, no stem statement is associated.	K/A Randomly Rejected	3.9	3.4

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Tier 2 Group 2

Name / Safety Function:	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Number	Question Type	K/A Topic	RO	SRO
Nuclear Instrumentation	1	0	0	0	0	0	0	0	0	0	0	015K1.01	Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	RPS	3.	3.2
Non-nuclear Instrumentation	0	0	0	0	0	0	0	1	0	0	0	016A2.04	Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 45.6)	Voltage to instruments, both too high and too low	2.5	2.6
In-core Temperature Monitor	0	0	0	0	0	0	0	0	0	1	0	017A4.01	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Actual in-core temperatures	3.8	4.1
Containment Iodine Removal	0	0	0	0	~~0~~ 1	0	0	0	0	~~1~~ 0	0	027A4.01	Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	K/A Randomly Rejected	3.3	3.3
												027K5.01	Knowledge of the operational implications of the following concepts as they apply to the CIRS: purpose of charcoal filter.	Randomly selected, see Form ES-401-4.	3.1	3.4

Tier 3

Category	KA Number	K/A Topic	RO	SRO
Conduct of Operations	G2.1.11	Knowledge of less than one hour technical specification action statements for systems.	3	3.8
Conduct of Operations	G2.1.27	Knowledge of system purpose and or function.	2.8	2.9
Conduct of Operations	G2.1.20	Ability to execute procedure steps.	4.h	4.2
Equipment Control	G2.2.33	Knowledge of control rod programming.	2.5	2.5
Equipment Control	G2.2.27	Knowledge of the refueling process.	2.6	3.5
Equipment Control	G2.2.11	Knowledge of the process for controlling temporary changes.	2.8	3.4
Radiation Control	G2.3.9	Knowledge of the process for performing a containment purge.	2.5	3.4
Radiation Control	G2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9	3.3
Emergency Procedures/Plan	~~G2.4.15~~	~~Knowledge of communications procedures associated with EOP implementation.~~ TM See form ES 401-4	~~3~~	~~3.5~~
	G2.4.18	Knowledge of the specific bases for EOP's.	2.7	3.6
Emergency Procedures/Plan	G2.4.46	Ability to verify that the alarms are consistent with the plant conditions.	3.5	3.6
	G2.4.47	Knowledge of event-based EOP mitigation strategies	3.1	3.8
	G2.4.45	Ability to prioritize and interpret the significance of each annunciator or alarm.	3.3	3.6

See form ES 401-4

Tier / Group	Randomly Selected K/A	Reason for Rejection
1/1	011EK3.07	K/A not applicable since facility does not rely on charging pumps for SI flow on LOCA (011EK3.02 randomly selected as replacement).
2/1	064A3.09	K/A not applicable to facility. K/A topic could not be verified to exist from reference material (064A3.07 randomly selected as replacement).
2/2	028A1.02	K/A does not apply to facility. As of Dec. 2001, facility no longer has actions for use of Hydrogen Recombiners or PACV system (027K5.01 randomly selected as replacement).
1/2	074EG2.4.27	Generic K/A G2.4.27 in conjunction with 074 topic of inadequate core cooling was not conducive for developing a question at the SRO level (074EG2.4.16 randomly selected as replacement).
2/2	055G2.1.28	Question could not be developed without compromising previously developed questions (033G2.1.28 randomly selected as replacement).
3	G2.4.28	Could not find procedures associated with this K/A topic, most likely Safeguards information (G2.4.7 randomly selected as replacement).
3	G2.4.15	Question could not be developed with discriminating value (G2.4.18 randomly selected as replacement).
1/1	057A2.06	K/A changed due to overlap and potential double jeopardy and cuing of previously developed questions on inverters (057A2.19 randomly selected as replacement).
1/1	058AG2.2.3	K/A changed due to DC power being shared between units, i.e. no unit differences for loss of DC power (058AA2.03 randomly selected as replacement).
1/1	008AG2.4.23	RO's are not tested/required to know basis for protitizing emergency procedure implementation, this is SRO level (008AG2.4.21 randomly selected as replacement).
2/2	071A2.07	Information relating waste disposal to Meteorological tower failure could not be found (071K1.06 randomly selected as replacement).
1/1	WE04EG2.4.25	Knowledge of fire protection procedures not related to a LOCA outside containment (WE04EG2.4.18 randomly selected as replacement).
1/1	065AG2.3.10	Loss of instrument air not associated with procedures to reduce radiation levels (065AG2.1.9 randomly selected as replacement).
1/1	027AG2.2.11	Process for controlling temporary changes not conducive for formulating a question related to pressurizer pressure control malfunctions (027AG2.4.15 randomly selected as replacement).
2/1	004A2.05	Question could not be written at the SRO level for this topic (004A1.04 randomly selected as replacement).
2/2	034G2.1.28	Question did not have a CFR 43 reference or a specific learning objective. (034G2.1.7 randomly selected as replacement).
1/1	065G2.1.9	Question did not have a CFR 43 reference or a specific learning objective. (065G2.1.6 randomly selected as replacement)

Facility: Turkey Point Scenario No.: 1 Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: Mode I, 559°F, 50% RTP (IC-2)

Turnover: Power is holding at 50% returning from 40% for turbine valve testing and 38 SGFP breaker (3AC14) repair. Valve test and breaker repair now complete. After shift turnover, place 3B SGFP back in service then return power to 100% per 3-GOP-301. 3-GP-074 complete thru step 5.1.2.7. Equipment OOS -- 3A RMRP (CCW leak discovered 1 hr ago), PRNI channel N-41 (upper detector failure), 3A EDG (voltage regulator output low). Heater drain water quality currently not acceptable. Heater drain pumps secured & 3 condensate pumps running per 3-GOP-301 step 5.83.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N/BOP N/SRO	Place 3B SGFP back in service per 3-OP-074.
2	TFH1TU56=T	I/RCO I/SRO	After 3B SGFP placed in service, PT-3-456 fails high. Operators respond using 3-ONOP-049.1. Bistables can not be thrown due to PR channel N-3-41 being OOS (takes 2/3 OTΔT rx trip channels OOS).
3	TVHNL1A = 0.00105 (60 sec ramp)	C/RCO C/SRO	After 3-ONOP-049.1 completed, 3A RCP #1seal leak of f increases to 5.5-6.0 gpm requiring response per 3-ONOP-041.1.
4	N/A	R/ALL	Fast load reduction commenced in response to high #1 seal leakof f on 3A RCP per 3-ONOP-100.
5**	TFF1M97H=T	I/BOP I/SRO	After > 10% load reduction, FT-3-497 (3C s/g ch III feed flow) fails high requiring 3C s/g manual level control until ch IV feed flow channel selected for control. Operators respond per 3-ONOP-049.1.
6	TVHNL1A = 0.0012 (60 sec ramp)		After FCV-3-498 returned to auto, 3A RCP #1 seal leak of f > 6 gpm requires tripping reactor then 3A RCP. Operators respond per 3-EOP-E-0 immediate actions and f oldout page including ***CRITICAL TASK: Tripping RCPs on a SBLOCA within 5 min of reaching RCP trip criteria.***
7	TFHN23=T TFHN34=T TFHN12=T conditional on IMH208SO	M/ALL	3A RCP trip induces a small break LOCA requiring saf ety injection. Operators continue to respond per 3-EOP-E-0 prompt & subsequent actions up through transition to 3-EOP-E-1.
7A	TFQ634BF=T	C/ALL	3B sequencer fails to operate and associated loads must be manually started per prompt actions of 3-EOP-E-0.
7B	TFM1D3BS=T	C/RCO C/SRO	3B RHRP fails to respond to manual start signal during prompt actions of 3-EOP-E-0.
8	N/A		Operators respond using 3-EOP-E-1 due to small break LOCA. With both U3 RHRPs OOS, a loss of emergency recirculation capability exists requiring subsequent transition to 3 EOP-ECA-1.1. 3-EOP-ECA-1.1 is completed through completion of ***CRITICAL TASK: Make up to the RWST and minimize RWST outflow per 3/4-EOP-ECA-1.1.***

* – (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

** - Optional event far use if BOP position being observed. May be deleted otherwise.

Facility: Turkey Point Scenario No.: 2 Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: Mode 1, 567°F, 75% RTP (IC-16)

Turnover: Power is at 75% following turbine valve testing. Return power to 100% this shift per 3-GOP-301. Equipment OOS -- A AFWP (failed last IST), 3A CCWHX (cleaning), 3A EDG (voltage regulator output low). Note C AFWP aligned to train 1 and tested in that configuration. 3-ESP-325.136 EDG operability testing in progress (3A EDG OOS) par section 7.6 [completed thru step 7.6.2.9)

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N/BOP N/SRO	3B EDG operability test per 3-OSP-023.1
2	TFS1M6WH=T	I/BOP I/SRO	With 3B EDG shutdown, PT-3-495 fails high causing FT-3-494 failure high. Per 3-ONOP-049.1, operators take manual control of FCV-3-498, return level to program, select the operable steam flow channel and return 3C s/g level control to auto.
3**	TFLIC81=T	C/RCO C/SRO or R/ALL	Once 3-ONOP-049.1 response is complete, a control bank D rod (M10) drops into the core requiring response per 3-ONOP-028.3
4**	N/A		A fast load reduction to < 50% power is initiated per 3-ONOP-100 in response to the dropped rod.
5	TFE2D01F=T TAQ5LRSA=0	C/ALL	After >10% load reduction, breaker 3AA02 fails open (U3 aux xfmr - → 3A 4kV bus) losing 3A 4kV bus resulting in a reactor trip signal.
5A	TFL2XASE=T TFL2XBSE=T TFL4AF=T	C/ALL	Reactor trip breakers fail to open. AMSAC fails to operate. The crew responds to the ATWS per 3-EOP-FR-S.1 including ***CRITICAL TASK: Insert negative reactivity into the core by one of the following methods prior to completing 3-EOP-FR-S.1: deenergizing CRDM MG sets, inserting RCCAs or establishing emergency boration flow to the RCS.***
6	TVSBVI 13= 0.01	M/ALL	Following transition to 3-EOP-E-0, a small 3A s/g steam break inside containment occurs. SI actuates. Operators respond per 3-EOP-E-0.
6A	TFC1DOG=T conditional on C10650IR	C/RCO C/SRO	3A ECC fails upon start and 3B ECC must be manually started per prompt actions of 3-EOP-E-0 and ***CRITICAL TASK: Manually actuate at least 1 ECC prior to reaching 55 psig inside containment.***
7	N/A		3A 4kV bus is reenergized from U3 SUT per 3-ONOP-004.2. 3C ECC is started mitigating the containment pressure transient.
8	N/A		Operators transition to & perform 3-EOP FR-Z.1 when an orange path FRP occurs due to containment pressure > 20 psig.
9***	N/A		Upon completion of 3-EOP-E-0, the crew isolates the faulted s/g per 3-EOP-E-2 and ***CRITICAL TASK: Isolate a faulted steam generator prior to transitioning from 3-EOP-E-2. Isolate feed to a faulted steam generator inside containment within 10 minutes.*** The scenario is completed once 3A 4kV bus is restored and 3-EOP-E-2 is complete.

* - (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

** - Events 3 & 4 may be credited as a component failure or a reactivity change but not both.

*** - If events 7 & 8 complete, event 9 may deleted at lead examiner discretion.

Facility: Turkey Point Scenario No.: _3_ Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: Mode 1, 574°F, 100% RTP (IC-6)

Turnover: Power is at 100% steady state. 20 gpd leak on 3C s/g with compensatory actions taken per 3-ONOP-071.2. Equipment OOS — train 1 AFW (leak on train 1 steam header), 3A charging pump (controller tubing vibration failure), 3A EDG [voltage regulator output low). B & C AFWPs aligned to train 2 and tested in that configuration. To aid in RCS chemistry control, Chemistry requests a 2nd charging pump & 2nd letdown orifice be placed in service.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N/RCO N/SRO	Place 2nd charging pump in service and align 2nd letdown orifice per 3-OP-047.
2	TFS1MAML=T	I/ALL	Once charging & letdown realigned, PT-3-447 fails low. Operators respond per 3-ONOP-028 & 3-ONOP-049.1.
3	TFK1A611=T TVKA002X= 1.0/60	C/RCO C/SRO	With 3-ONOP-049.1 complete, 3B CCWP trips. PC-3-611 fails defeating CCWP auto start. 3-ONOP-030 or 3-ARP-097.CR is used to manually start a CCWP restoring CCW flow.
4	N/A	R/ALL	After CCWP Tech Specs evaluated, the unit 3 Turbine Operator reports increasing vibration on 3B SGFP requesting that pump be secured as soon as possible. A 3-ONOP-100 fast load reduction to < 60% power is performed in response to this report.
5	TFFVP18=T	C/BOP C/SRO	After > 10% load reduction, 3B SGFP shaft shears. The 3B SGFP control switch must be taken to STOP for the automatic runback to occur. Operators respond per 3-ARP-097.CR & 3-ONOP-089. With the ensuing high Tavg, the crew may attempt manual steam dump control or they may trip the reactor and proceed directly to 3-EOP-E-0 in the next event.
6	TFFVV98C=T TFL2XASE=T TFL2XBSE=T TFL2XASE & TFL2XBSE = F / IML2CRXT	C/ALL**	If the reactor has not already been manually tripped, at the end of the runback, FCV-3-498 continues to throttle closed on its own requiring a manual reactor trip on 3C s/g low-low level. ***CRITICAL TASK: Manually tripping the reactor within 2 minutes after receipt of an automatic reactor trip signal.*** The reactor will not trip automatically so the reactor must be manually tripped. Operators initially respond per 3-EOP-E-0.
7	TFF8SWYD= T / P8:539G	M/ALL	A loss of offsite power occurs in response to the loss of PTN unit 3 from the grid.
7A	TAG5LRSA=0 TFQ5GBFS=T TFE2D23A=T	C/RCO C/SRO	3B EDG fails to auto start or respond to a manual start signal from the U3 console. 3A EDG was OOS at shift turnover. This results in a loss of all AC power with resulting transition to 3-EOP-ECA-0.0. 3-ONOP-004.2/004.3 are entered to attempt to restore power to 3A/3B 4kV buses. If an attempt is made to repower using the SBO tie, 3AD07 will fail to close.
8	N/A		Once ESF loads taken to P-T-L, field operators locally start 3B EDG restoring power to 3B 4kV bus. This requires transition to the end of 3-EOP-ECA-0.0 and subsequently to 3-EOP-ECA-0.2 (SI required due to low PZR level). ***CRITICAL TASK: Ensure one train of safeguards is actuated and running prior to transitioning from 3-EOP-ECA-0.2.***

* – (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

** - Credit for component failure only awarded if runback allowed to finish and FCV-3-498 failure entered to force reactor trip. No credit if reactor manually tripped in event 5.

Facility. Turkey Point Scenario No.: 4 Op-Test No.: _____

Examiners: _____ Operators: _____

Initial Conditions: Mode 1, 574°F, 100% RTP (IC-11)

Turnover: **Power** is at 100% steady state following a recent refueling outage Equipment OOS — 3C CCWP (mechanical seal replacement), **3k** EDG (voltage regulator output low) & 4A **HHSIP** (breaker failure tu close on start signal). 3A condensate pump **has** developed a TPCW leak. Immediately after shift turnover, start **3C** condensate **pump** and secure 3A per 3-OP-073.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N/BOP N/SRO	Start 3C condensate pump & stop 3A condensate pump per 3-OP-073.
2	TFH1TU45=T	I/RCO I/SRO	Following condensate pump realignment, PT-3-445 fails high. Operators respond per 3-ONOP-041.5.
3**	TAK53CD=0 TAK54CD=0 TVKFLVT1= 0.05	C/BOP C/SRO	With PZR pressure recovering per 3-ONOP-041.5, an instrument air leak occurs upstream of the U3 aftercooler. Operators respond per 0-ONOP-013 to isolate the leak. This results in the loss of 3CM, 3CD & the two temporary diesel air compressors connected to unit 3.
4	TVSVV45D=1.0	C/RCO C/SRO	After instrument air stabilized, 3B s/g safety RV-3-1405 begins to leak by (3% total steam flow). Operators manually control the reactor & turbine < 100% power.
5	TVHHSGB= 0.06	R/ALL	Once reactor power stable < 100%, 3B s/g develops a 60 gpm tube leak requiring 3-ONOP-071.2 response including fast load reduction.
6	TVHHSGB= 0.25	M/ALL	After > 10% load reduction, 3B s/g tube leak exceeds charging pump capacity requiring a manual reactor trip. Operators respond to the faulted-ruptured s/g per 3-EOP-E-0.
6A	TFL3SIA1=T TFL3SIM1=T	C/ALL	Train A safety injection signal fails to actuate automatically or manually. Affected ESF equipment must be started / repositioned as applicable per 3-EOP-E-0.
6B	TFMVM3BS=T	C/RCO C/SRO	3B HHSIP shaft shears upon start. 3A HHSIP is started manually to satisfy ***CRITICAL TASK: Establish flow from at least 2 HHSIPs prior to transitioning out of 3-EOP-E-0 with valid SI signal present.***
7	N/A		Transition is made to 3-EOP-E-2 to perform ***CRITICAL TASK: Isolate s faulted steam generator prior to transitioning from 3-EOP-E-2.*** This is followed by 3-EOP-E-3 to address the 3B s/g tube rupture. Since the s/g is also faulted, subsequent transition is made to 3-EOP-ECA-3.1.

* - (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

** - Optional event for use if BOP position being observed. May be deleted otherwise.