ES-401, Rev. 9 | Site-Specific SRO Written Examination Cover Sheet | Form ES-401-8

U.S. Nuclear Regulatory Commission

Site-Specific SRO Written Examination

Applicant Information	
Name:	
Date: **October 26, 2011**	Facility/Unit: **Oconee**
Region: I / **II** / III / IV	Reactor Type: W / CE / **BW** / GE
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination you must achieve a final grade of at least 80.00 percent overall, with 70.00 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80.00 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

All work done on this examination is my own. I have neither given nor received aid.

_____
Applicant's Signature

Results		
RO/SRO-Only/Total Examination Values	____ / ____ / ____	Points
Applicant's Scores	____ / ____ / ____	Points
Applicant's Grade	____ / ____ / ____	Percent

Question: 76
(1 point)

Given the following Unit 1 conditions:

- Large Break LOCA has occurred
- 1A AND 1B LPI pumps failed to start
- ICC tab in progress

Which ONE of the following would result in a transfer to the LOCA CD tab assuming the TSC is available and concurs with actions taken whenever required?

A. Core SCM = 0°F stable

B. One RCP per loop placed in operation

C. 1C LPI pump aligned and operating

D. Steam Generator cooling available and both SG's have been fully depressurized

Question: 77
(1 point)

Given the following Unit 1 conditions:

Initial conditions:
- Reactor in MODE 2
- RC Makeup Flow = 45 gpm stable
- Pressurizer level = 220" stable

Current conditions:
- 1HP-120 fails CLOSED

Which ONE of the following describes:

1) how long (in minutes) before Pzr level will reach the level where Pzr heaters become inoperable

2) the reason for maintaining pressurizer level above the Pzr heater cutoff setpoint

ASSUME NO OPERATOR ACTIONS

A. 1. Approximately 96
   2. Helps to ensure the ability to maintain RCS pressure such that the RCS loops remain subcooled during a loss of offsite power

B. 1. Approximately 96
   2. Helps to ensure that DNBR Safety Limit criteria will be met in the event of an unplanned loss of forced RCS flow

C. 1. Approximately 75
   2. Helps to ensure the ability to maintain RCS pressure such that the RCS loops remain subcooled during a loss of offsite power

D. 1. Approximately 75
   2. Helps to ensure that DNBR Safety Limit criteria will be met in the event of an unplanned loss of forced RCS flow

Question: 78
(1 point)

Given the following Unit 1 conditions:

Time = 1200
- Reactor in MODE 5
- A and B LPSW pumps failed due to a seismic event
- RCS temperature 131°F slowly increasing

Time = 1205
- Unusual Event declared in accordance with RP/1000/01 (Emergency Classification)

Time = 1430
- Plant conditions require escalating the Emergency Plan classification to an ALERT

Which ONE of the following:

1) is a condition that will require cross connecting with Unit 3's LPSW system?

2) states who has the responsibility to upgrade the classification at TIME = 1430 in accordance with RP/0/A1000/002 (Control Room Emergency Coordinator Procedure)?

A. 1. Loss of C LPSW Pump
   2. TSC

B. 1. Loss of C LPSW Pump
   2. OSM

C. 1. RCS temperature = 205°F slowly increasing
   2. TSC

D. 1. RCS temperature = 205°F slowly increasing
   2. OSM

Question: 79
(1 point)

Given the following Unit 1 conditions:

- Reactor in MODE 5
- ALL LTOP requirements established in accordance with Tech Spec 3.4.12 (LTOP)
- 1HP-120 demand signal fails to 100%

Which ONE of the following describes the reason the failure will NOT result in exceeding RCS brittle fracture pressure limits?

A. LTOP requires the HPI system to be deactivated therefore no HPI pumps will be injecting

B. Mechanical Travel Stop on 1HP-120 limits flow such that the operator has 10 minutes to identify and mitigate the event

C. The PORV will act as a backup to the failed Administrative Control and prevent exceeding the brittle fracture limits

D. The dedicated LTOP operator is credited with identifying the failure and responding within 10 minute of the event initiation

Question: 80
(1 point)

Given the following Unit 3 conditions:

- SGTR tab in progress
- Core SCM = 59°F increasing
- RCS cooldown in progress
- Group 2 Rod 4 100% withdrawn (did not insert when tripped)
- RCS temperature = 550°F decreasing

Which ONE of the following describes the actions directed by the Procedure Director in accordance with the SGTR tab in preparation for isolating the faulted Steam Generator?

A. cooldown to 525°F – 532°F, cooldown rate limits apply

B. cooldown to 525°F – 532°F, limited ONLY by Pzr level

C. cooldown to 450°F – 525°F, cooldown rate limits apply

D. cooldown to 450°F – 525°F, limited ONLY by Pzr level

Question: 81
(1 point)

Given the following Unit 1 conditions:

Initial conditions:
- Startup in progress
- Control Rod Group 2 being withdrawn for startup
- 1B RPS channel in Manual Bypass

Current conditions:
- 1KVIA panelboard input breaker trips OPEN
- 1C RB pressure transmitter feeding RPS fails LOW

Which ONE of the following describes:

1) the status of the 1A RPS channel?

2) the MAXIMUM time (hours) allowed by Tech Spec 3.3.1 (RPS Instrumentation) to open ALL CRD breakers?

REFERENCE PROVIDED

A. 1. Tripped
   2. 6

B. 1. Tripped
   2. 12

C. 1. NOT Tripped
   2. 6

D. 1. NOT Tripped
   2. 12

Question: 82
(1 point)

Given the following Unit 1 conditions:

Initial conditions:
- Reactor in MODE 2 and returning to power following a maintenance shutdown
- Reactor power = 4% slowly increasing
- Control Rod Group 1 Rod 4 drops fully into the core

Current conditions:
- Reactor power = 3% stable

Which ONE of the following describes:

1) the MAXIMUM time allowed by Tech Spec 3.1.4 (Control Rod Group Alignment) to verify Shutdown Margin is within limits?

2) the actions <u>required</u> in accordance with AP/1/A/1700/001 (Unit Runback)?

A. 1. 15 minutes
   2. Maintain current power level until Control Rod repair and recovery are complete then proceed with OP/1/A/1102/001 (Controlling Procedure for Unit Startup)

B. 1. 1 hour
   2. Maintain current power level until Control Rod repair and recovery are complete then proceed with OP/1/A/1102/001 (Controlling Procedure for Unit Startup)

C. 1. 15 minutes
   2. Go to OP/1/A/1102/010 (Controlling Procedure for Unit Shutdown) and shutdown the reactor prior to Control Rod repair and recovery

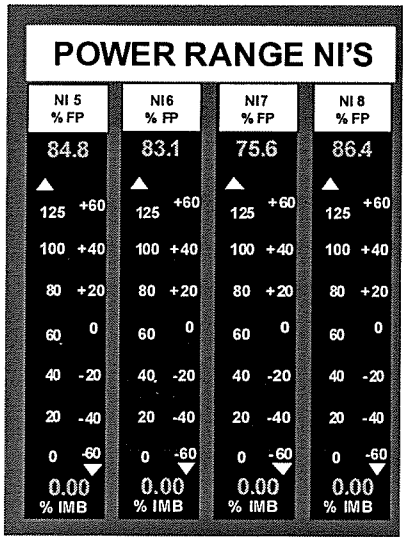
D. 1. 1 hour
   2. Go to OP/1/A/1102/010 (Controlling Procedure for Unit Shutdown) and shutdown the reactor prior to Control Rod repair and recovery

Question: 83
(1 point)

Given the following Unit 1 conditions:

Initial Conditions:
- Reactor power = 85% slowly increasing
- Delta Tc in HAND

Current conditions:
- ICS runback in progress
- Reactor power as indicated below



Which ONE of the following describes:

1) the reason for the ICS runback?

2) the consequences of operating the unit under the conditions described above?

A. 1. Dropped Control Rod
2. Allowable Thermal Power limits of Tech Spec 3.4.4 (RCS Loops MODES 1 and 2) could be exceeded

B. 1. Dropped Control Rod
2. Maximum Linear Heat Rate could be exceeded

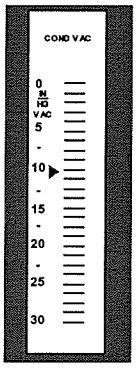
C. 1. RCP trip
2. Allowable Thermal Power limits of Tech Spec 3.4.4 (RCS Loops MODES 1 and 2) could be exceeded

D. 1. RCP trip
2. Minimum DNBR limits could be exceeded

Question: 84
(1 point)

Given the following Unit 1 conditions:

- RCS temperature = 545°F increasing
- Turbine Bypass Valves are in HAND and CLOSED
- AP/27 (Loss of Condenser Vacuum) in progress
- Steam Generator Tube leak rate = 20 gpm
- Condenser vacuum is as indicated below



Which ONE of the following describes:

1) the RCS response to attempts to open the TBV's from the ICS Bailey stations in the Control Room?

2) actions required if the Atmospheric Dump Valves are required to perform the cooldown to LPI?

REFERENCE PROVIDED

A. 1. The RCS heatup rate will be affected
   2. Declare an Unusual Event AND make a 1 hour ENS notification

B. 1. The RCS heatup rate will be affected
   2. 4 hour ENS notification ONLY

C. 1. The RCS heatup rate will NOT be affected
   2. Declare an Unusual Event AND make a 1 hour ENS notification

D. 1. The RCS heatup rate will NOT be affected
   2. 4 hour ENS notification ONLY

Question: 85
(1 point)

Given the following plant conditions:

- ACB-3 closed

Which ONE of the following is/are the MINIMUM condition(s) that would render the Underground Emergency Power Path inoperable in accordance with the basis of Tech Spec 3.8.1 (AC Sources – Operating)?

A. ONLY ACB-3 (Unit 1 EMER FDR) inoperable

B. BOTH ACB-3 AND ACB-4 (Unit 2 EMER FDR) must be inoperable

C. ONLY Breaker S1 (STBY BUS 1 TO MFB1) inoperable

D. BOTH Breakers S1 AND S2 (STBY BUS 2 TO MFB2) must be inoperable

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Question: 86
(1 point)

Which ONE of the following describes the:

1) status of an ES Instrument Channel in accordance with Tech Spec 3.3.5 (ES Input Instrumentation) whose Reactor Building Pressure actuation setpoint is found to be set at 3.6 psig?

2) requirement for ES Channel 1 Manual Initiation to be Operable in accordance with Tech Spec 3.3.6 (ESPS Manual Initiation)?

A. 1. Operable
2. Manual Actuation pushbutton on UB1 must be Operable ONLY

B. 1. Operable
2. Manual Actuation pushbutton on UB1 must be Operable OR all components must be able to be manually aligned to their ES position within 10 minutes of ES actuation

C. 1. Inoperable
2. Manual Actuation pushbutton on UB1 must be Operable ONLY

D. 1. Inoperable
2. Manual Actuation pushbutton on UB1 must be Operable OR all components must be able to be manually aligned to their ES position within 10 minutes of ES actuation

Question: 87
(1 point)

Given the following Unit 1 conditions:

Time = 1200:
- Reactor power = 100%
- 1B RBS pump OOS

Time = 1201:
- Seismic event
- 1SA09/C9 (RBCU B Cooler Rupture) actuated (valid)
- 1TD de-energized

Time = 1215
- 1SA09/C9 required actions are complete
- There is NO additional evidence of damage from the seismic event

1) Containment is __(1)__?

2) The __(2)__ RBCU(s) is/are Operable?

Which ONE of the following completes the statements above?

A. 1. Operable
   2. 1A ONLY

B. 1. Operable
   2. 1A and 1C

C. 1. Inoperable
   2. 1A ONLY

D. 1. Inoperable
   2. 1A and 1C

Question: 88
(1 point)

Given the following Unit 1 conditions:

- Reactor in MODE 3
- Startup in progress

Which ONE of the following states:

1) the MINIMUM Containment Cooling equip required to be OPERABLE in accordance with Tech Spec 3.6.5 (Reactor Building Spray and Cooling Systems?

2) if entry into MODE 2 is allowed when the LCO is NOT met while in MODE 3?

A. 1. Two RB Spray Trains and Three RB Cooling Trains
   2. allowed

B. 1. Two RB Spray Trains and Three RB Cooling Trains
   2. NOT allowed

C. 1. One RB Spray Train and Two RB Cooling Trains ONLY
   2. allowed

D. 1. One RB Spray Trains and Two RB Cooling Trains ONLY
   2. NOT allowed

Question: 89
(1 point)

Given the following Unit 1 conditions:

Initial Conditions:
- Reactor power = 100%
- MSLB occurs on 1A SG
- BOTH channels of 1A SG AFIS fail to actuate

Current conditions:
- AFIS cannot be Manually actuated
- ALL SCM's = 0°F stable due to the MSLB

Which ONE of the following states the:

1) Safety Function that AFIS is credited to perform?

2) EOP tab that will direct the mitigating actions for this event?

A. 1. Maintain Containment pressure within design limits
   2. EHT

B. 1. Maintain Containment pressure within design limits
   2. LOSCM

C. 1. Prevent an inadvertent return to criticality
   2. EHT

D. 1. Prevent an inadvertent return to criticality
   2. LOSCM

Question: 90
(1 point)

Given the following Unit 1 conditions:

Initial conditions:
- Reactor in MODE 6
- Fuel offload in progress
- Penetration openings exist due to containment penetration work in progress

Current conditions
- Control Room notified that a Fuel Assembly has been dropped
- 1SA-8 B-9 (PROCESS MONITOR RADIATION HIGH) actuates
- 1RIA-3 (Fuel Transfer Canal Area Monitor) HIGH alarm actuates
- 1RIA-49 (RB Gas) HIGH alarm actuates
- RB Evacuation Alarm sounds

Which ONE of the following states the:

1) source of the AUTOMATIC operation of the RB Evacuation Alarm?

2) Abnormal Procedure that contains the actions that are required to mitigate the initiating event?

A. 1. 1RIA-3
   2. AP/1/A/1700/009 (Spent Fuel Damage)

B. 1. 1RIA-3
   2. AP/1/A/1700/018 (Abnormal Release of Radioactivity)

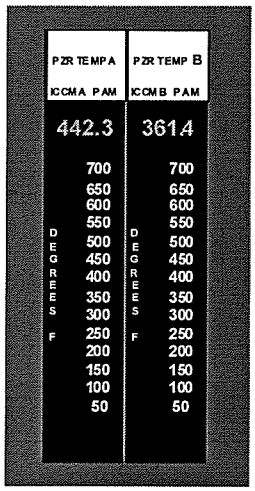
C. 1. 1RIA-49
   2. AP/1/A/1700/009 (Spent Fuel Damage)

D. 1. 1RIA-49
   2. AP/1/A/1700/018 (Abnormal Release of Radioactivity)

Question: 91
(1 point)

Given the following Unit 1 conditions:

- Time - 1200
- Reactor power = 100%
- Pressurizer temperature indicates as shown below



Which ONE of the following describes ALL Tech Spec 3.3.8 (PAM Instrumentation) Condition(s) that apply (if any) at Time = 1200?

REFERENCE PROVIDED

A. NO Tech Spec 3.3.8 Condition applies

B. Condition A ONLY

C. Condition A and C ONLY

D. Condition A, C, and H

Question: 92
(1 point)

Given the following Unit 3 conditions:

- Reactor in MODE 6
- Core offload in progress
- Main Fuel Bridge is withdrawing a fuel assembly that appears to be binding

The __(1)__ interlock will stop the withdrawal of the fuel assembly to prevent fuel damage and in accordance with OP/0/A/1506/001 (Fuel and Component Handling), __(2)__ must either be present or give concurrence prior to bypassing the interlock.

Which ONE of the following completes the statement above?

A. 1. Fuel Overload (TS-1)
   2. the Operations Shift Manager ONLY

B. 1. Fuel Overload (TS-1)
   2. any licensed SRO

C. 1. Fuel Hoist Up/Down (TS-2)
   2. the Operations Shift Manager ONLY

D. 1. Fuel Hoist Up/Down (TS-2)
   2. any licensed SRO

Question: 93
(1 point)

Given the following plant conditions:

- "A" GWD tank being released at 2/3 Station Limit
- 1RIA-45 is approaching its alarm setpoint

Which ONE of the following describes:

1) the MINIMUM RIA response that would indicate that the instantaneous release rates in accordance with SLC 16.11.2 (Radioactive Gaseous Effluents) were being approached?

2) The MINIMUM level of approval required by OP/1-2/A/1104/018 (GWD System) prior to initiating the 2/3 Station Release?

A. 1. EITHER of the other 2 units RIA-45 in alarm at setpoint
   2. Control Room SRO

B. 1. BOTH of the other 2 units RIA-45 in alarm at setpoint
   2. Control Room SRO

C. 1. EITHER of the other 2 units RIA-45 in alarm at setpoint
   2. OSM ONLY

D. 1. BOTH of the other 2 units RIA-45 in alarm at setpoint
   2. OSM ONLY

Question: 94
(1 point)

Given the following plant conditions:

- Unit 1 Reactor power = 100%
- Unit 2 Reactor power = 100%
- Unit 1 and Unit 2 Control Room SRO's are both inside the Control Room

Which ONE of the following activities is an acceptable activity while maintaining the oversight role of the Unit 1 Control Room SRO in accordance with OMP 2-01 (Duties and Responsibilities of On Shift Personnel)?

A. Leave the Control Room area for 3 minutes without giving a complete turnover

B. Serve as the Reactivity Management SRO during Control Rod withdrawal

C. Serve as the Evolution SRO during a specific activity

D. Fill the NRC Communicator role

Question: 95
(1 point)

Given the following Unit 2 conditions:

Initial conditions:
- Time = 0100
- Refueling in progress
- FTC level = 22 feet stable
- No water additions are being made to the system
- 2A LPI train is Operable and in service
- 2B LPI train is Operable

Current conditions:
- Time = 2300
- Refueling SRO desires stopping the 2A LPI Pump to aid in inserting a fuel assembly

Which ONE of the following:

1) states whether the 2A LPI pump may be stopped in accordance with OP/2/A/1502/007 (Operations Defueling /Refueling Responsibilities)?

2) describes the system(s) required to be operable in support of the Operability of a DHR loop in accordance with the basis of Tech Spec 3.9.4 (DHR and Coolant Circulation)?

A. 1. 2A LPI Pump may be stopped for up to 1 hour per 8 hour period.
2. LPSW ONLY

B. 1. 2A LPI Pump may be stopped for up to 1 hour per 8 hour period.
2. LPSW and ECCW

C. 1. 2A LPI Pump may NOT be stopped
2. LPSW ONLY

D. 1. 2A LPI Pump may NOT be stopped
2. LPSW and ECCW

Question: 96
(1 point)

Given the following Unit 1 condition:

- Reactor power = 100%
- Critical Activity Plan as described in NSD 213 (Risk Management Process) is being implemented
- The Critical Activity Plan has reached a required hold point
- Holding at this point in the Critical Activity Plan could cause a reactor trip

In accordance with NSD 213 (Risk Management Process), which ONE of the following states the LOWEST level of management that has the authority to waive the "hold" that is required by the Complex Activity Plan?

A. Station Manager

B. Superintendent of Operations

C. Operations Shift Manager

D. Control Room SRO

Question: 97
(1 point)

Given the following Unit 2 conditions:

- Date = 10-1
- Time = 1200
- A Tech Spec required surveillance on an instrument channel with a frequency of 12 hours has just been discovered NOT performed since 1200 on 9-26.

Which ONE of the following describes the status of the associated equipment in accordance with Tech Specs if the surveillance is NOT performed?

A. Immediately declare the equipment Inoperable

B. Remains OPERABLE until no later than 10-2 at 0000

C. Remains OPERABLE until no later than 10-2 at 0300

D. Remains OPERABLE until no later than 10-2 at 1200

Question: 98
(1 point)

Given the following Unit 1 conditions:

Initial conditions:
- Reactor power = 100%

Current conditions:
- RCS pressure = 1136 psig slowly decreasing
- Core SCM = 0°F
- RB pressure = 11.6 psig slowly decreasing
- 1A SG pressure = 1010 psig slowly decreasing
- 1B SG pressure = 1008 psig slowly decreasing

Which ONE of the following:

1) states whether Emergency Dose Limits are in effect?

2) describes the maximum (TEDE) dose (rem) that an NEO will be allowed to receive while performing a time critical task outside of the control room?

A. 1. Yes
   2. 10

B. 1. Yes
   2. 5

C. 1. No
   2. 5

D. 1. No
   2. 2

Question: 99
(1 point)

Given the following Unit 1 conditions:

Initial Conditions
- SBLOCA has occurred
- BOTH Main Feedwater pumps have tripped
- Rule 2 is complete
- ONE HPI train injecting
- Unit 3 is supplying the Aux Steam header

Current conditions:
- BOTH MDEFWP's have failed to start

Which ONE of the following describes:

1) the actions that will be directed by the Procedure Director?

2) the reasons for the actions being directed?

A. 1. FULLY depressurize both Steam Generators
   2. Initiates a rapid cooldown to LPI

B. 1. FULLY depressurize both Steam Generators
   2. Ensures Steam Generators do not become a heat source during cooldown

C. 1. RAPIDLY depressurize both Steam Generators to 250 psig ONLY
   2. Initiates a rapid cooldown to LPI

D. 1. RAPIDLY depressurize both steam generators to 250 psig ONLY
   2. ensures steam generators do not become a heat source during cooldown

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Question: 100
(1 point)

Given the following plant conditions:

Time = 1200
- Security Supervisor reports intruders have forced their way through the Vehicle Access Point (Security Point 1) near the complex using various weapons and have been seen heading towards the 525kv Switchyard

Time = 1205
- Security Supervisor reports intruders and their weapons are in the 525kv Switchyard AND the 230kv Switchyard

Time = 1215
- Intruders have gained access to the Unit 1&2 blockhouse and have rendered the contents useless

Without using the Emergency Coordinator Judgment option, which ONE of the following:

1) states the EAL classification required by the conditions at Time = 1205?

2) states the EAL classification required by the conditions at Time = 1215?

REFERENCE PROVIDED

A. 1. Alert
   2. Site Area Emergency

B. 1. Alert
   2. General Emergency

C. 1. Site Area Emergency
   2. Site Area Emergency

D. 1. Site Area Emergency
   2. General Emergency

Oconee 2011-302

ILT40 STUDENT REFERENCE LIST

The following questions have student references:

12 - EOP Enclosure 5.18

RO 17 - AP/34 Generator Capacity Curve

47 - AP/11 Encl 5.1A Pg 5

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81 - Tech Spec 3.3.1

SRO 84*- RP/1000/001

91 - Tech Spec 3.3.8

100*- RP/1000/001

* Question 84 and 100 use the same reference.

Examination KEY for: 2011B ONS SRO NRC Examin

Question Number	*Answer*
76	A
77	C
78	B
79	B
80	B
81	B
82	D
83	B
84	A
85	C
86	A
87	A
88	D
89	A
90	C
91	C
92	B
93	D
94	A
95	B
96	C
97	D
98	B
99	A
100	B