

KEY
LIMERICK 2017 SRO NRC WRITTEN EXAM

| | | | | | | | |
|----|---|----|---|----|---|---|---|
| 1 | A | 27 | B | 52 | A | 78 | C |
| 2 | B | 28 | C | 53 | B | 79 | A |
| 3 | D | 29 | D | 54 | C | 80 | C |
| 4 | C | 30 | A | 55 | A | 81 | B |
| 5 | C Accept Bor C AP 2/15/17 | 31 | D | 56 | A | 82 | D |
| 6 | C | 32 | C | 57 | B | 83 | B |
| 7 | D | 33 | B | 58 | D | 84 | A |
| 8 | A | 34 | B | 59 | C | 85 | A |
| 9 | D | 35 | B | 60 | A | 86 | C |
| 10 | D | 36 | B | 61 | C | 87 | A |
| 11 | A | 37 | A | 62 | C | 88 | B |
| 12 | D | 38 | D | 63 | B | 89 | C |
| 13 | B | 39 | C | 64 | C | 90 | A |
| 14 | D | 40 | D | 65 | A | 91 | D |
| 15 | B | 41 | A | 66 | B | 92 D deleted AP 2/15/17 | |
| 16 | D | 42 | C | 67 | A | 93 | C |
| 17 | C | 43 | A | 68 | D | 94 | D |
| 18 | B | 44 | B | 69 | B | 95 | B |
| 19 | A | 45 | C | 70 | C | 96 | D |
| 20 | D | 46 | B | 71 | B | 97 | D |
| 21 | A | 47 | D | 72 | A | 98 | B |
| 22 | D | 48 | C | 73 | C | 99 | C |
| 23 | A | 49 | C | 74 | C | 100 | B |
| 24 | D | 50 | B | 75 | C | | |
| 25 | B | 51 | A | 76 | A | | |
| 26 | D | | | 77 | D | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

1

ID: 1455392

Points: 1.00

A startup is in progress on unit 1

Which of the following describes when the IRM's will swap to a high frequency amplifier and the potential for a half SCRAM and / or a rod block?

| <u>Ranging IRM from range</u> | <u>Potential for a half SCRAM and / or rod block</u> |
|-------------------------------|--|
| A. 6 to 7 | Half SCRAM and rod block |
| B. 6 to 7 | Half SCRAM only |
| C. 2 to 3 | Half SCRAM and rod block |
| D. 2 to 3 | Half SCRAM only |

Answer: A

Answer Explanation

- A Correct per GP-2 App 1; **WHEN** changing range from 6 to 7 on the IRMs, **THEN** the range change swaps from the low frequency amplifier to the high frequency amplifier **AND** could cause a half-scrum. Although GP-2 does not reference a rod block the 1/2 scram is due to potential spiking of the IRM when ranging between 6 and 7. Any spiking that will cause a 1/2 scram will also cause a rod block
- B Incorrect a rod block will also be generated. Plausible to examinee who does not recall that when ranging from 6 to 7 there is a potential for spiking of the IRM which could result in a rod block and half SCRAM
- C Incorrect; plausible to the examinee who recalls an IRM function (SRM down scale rod block is bypassed) when ranging from 2 to 3
- D Incorrect; plausible to the examinee who confuses the SRM down scale bypass when ranged from 2 to 3 with when the amplifier swaps to high frequency and does not recall that a rod block will also be generated. from spiking of the IRM.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 1 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 2 |
| Difficulty: | 2.50 |
| | |
| System ID: | 1455392 |
| User-Defined ID: | Q# 1 NEW |
| Lesson Plan Objective: | LGSOPS0074.22A |
| | |
| Topic: | IRM range |
| RO: | 2.6 |
| SRO: | 2.7 |
| KA#: | 215003 K5.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | | |
|-----------------|--|--|--|---------------|-------------|
| Comments: | General Data | | | | |
| | Level | | RO | | |
| | Tier | | 2 | | |
| | Group | | 1 | | |
| | KA # and Rating | | 215003 K5.01 2.6/2.7 | | |
| | KA Statement | | 215003 Intermediate Range Monitor (IRM) System Knowledge of the operational implications of the following concepts as they apply to INTERMEDIATE RANGE MONITOR (IRM) SYSTEM : Detector operation | | |
| | Cognitive level | | High | | |
| | Safety Function | | 7 | | |
| | 10 CFR 55 | | 41.5 | | |
| | Technical Reference with Revision No: | | GP-2 LGSOPS0074 | Rev #: | 5 3 5 |
| | Justification for Non SRO CFR Link: | | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | | New | | |
| | Question Source: (i.e. New, Bank, Modified) | | New | | |
| | Low KA Justification (if required): | | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | New | | |
| | ILT | | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | | none | | |
| | LORT | | | | |
| | PRA: (i.e. Yes or No or #) | | No | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

2

ID: 1454410

Points: 1.00

Unit 1 plant conditions:

- 107 REACTOR F-5, DIV 1 STEAM LEAK DET SYS HI TEMP/TROUBLE alarm is lit
- 107 REACTOR H-5, DIV 3 STEAM LEAK DET SYS HI TEMP/TROUBLE alarm is **NOT** lit
- RCIC STEAM LINE HI FLOW alarm is **NOT** lit

An Equipment Operator in the Aux. Equipment room reports the following

- NUMAC TIS-25-101A RCIC equipment room is reading 195 degrees F
- NUMAC TIS-25-101C RCIC equipment room is reading 110 degrees F

Assuming no operator action which of the following identifies the status of the RCIC Isolation Valves one minute later?

| | <u>HV49-1F007 RCIC Steam Line Inboard</u> <u>Isolation</u> | <u>HV49-1F008 RCIC Steam Line Outboard</u> <u>Isolation</u> |
|----|---|--|
| A. | Open | Open |
| B. | Open | Closed |
| C. | Closed | Open |
| D. | Closed | Closed |

Answer: B

Answer Explanation

D incorrect If power is available either division activation will close all associated RCIC steam line valves. The two divisions are for redundancy, with no high steam line flow (>300%) there is not a full isolation is.

Candidate must determine that div 1 is above both the alarm (>123 degrees) setpoint and above trip set point (>180 degrees)

A incorrect plausible to the examinee who incorrectly believes that both DIV 1 and 3 temperatures are required for any valve to close.

B Correct the DIV 1 hi temperature will close the outboard valve.

C incorrect plausible to the examinee who incorrectly believes the DIV 1 isolation closes the inboard valve

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 2 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1454410 |
| User-Defined ID: | Q# 2 MODIFIED |
| Lesson Plan Objective: | LOT0380.06 RCIC |
| Topic: | Describe the status of RCIC Isolation valves with "DIV 1 STEAM LEAK DETECTION" |
| RO: | 3.1 |
| SRO: | 3.2 |
| KA#: | 217000 K1.07 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | |
|---|---|
| Level | RO |
| Tier | 2 |
| Group | 1 |
| KA # and Rating | 217000 K1.07 3.1/3.2 |
| KA Statement | Reactor Core Isolation Cooling System (RCIC) Knowledge of the physical connections and/or cause effect relationships between REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) and the following: Leak detection |
| Cognitive level | low |
| Safety Function | 2 |
| 10 CFR 55 | 41.5,41.7 |
| Technical Reference with Revision No: | Rev #: |
| Justification for Non SRO CFR Link: | N/A |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank |
| Question Source: (i.e. New, Bank, Modified) | bank 560597 |
| Low KA Justification (if required): | n/a |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | n/a |
| ILT | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none |
| LORT | |
| PRA: (i.e. Yes or No or #) | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | |
| Comments | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

3

ID: 1454509

Points: 1.00

Unit 1 plant conditions are as follows:

- OPCON 4
- '1B' RHR is in Shutdown Cooling

The following sequence of events occurs

- Annunciator 122-A1 D12 BUS DIFF/ OVERCURRENT LOCKOUT alarms
- After the annunciator is received reactor level lowers to -25 inches before being restored (no other operator actions have been taken)

Which of the following describes the final position of the listed RHR valves due to the above conditions?

- HV51-1F009, RHR S/D Cooling Inboard PCIV
- HV51-1F015B, ~~2B~~ RHR S/D Cooling injection Outboard PCIV

1 for 1/27/17

*corrected typo
"2" v. "1"
for 1/27/17*

| | <u>HV51-1F009</u> | <u>HV51-1F015B</u> |
|----|-------------------|--------------------|
| A. | Open | Open |
| B. | Closed | Closed |
| C. | Open | Closed |
| D. | Closed | Open |

Answer: D

Answer Explanation

- HV51-1F009, 1RHR S/D Cooling Inboard PCIV power supply is D11
 - HV51-1F015B, 1B RHR S/D Cooling injection PCIV power supply is D12
- A Incorrect plausible to the examinee who recalls that both the HV51-1F015A&B are powered from the same source but believe it is D11 not D12
- B Incorrect plausible to the examinee who does not recognize that a D12 bus differential over current will deenergize the bus, preventing the motor operated valves from closing
- C Incorrect plausible to the examinee who reverse inboard and outboard power supplies
- D Correct with D12 deenergized only the HV51-1F009, RHR S/D Cooling Inboard PCIV will close

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 3 Info | |
|--------------------------|-----------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 6 |
| Difficulty: | 2.00 |
| System ID: | 1454509 |
| User-Defined ID: | Q# 3 NEW |
| Lesson Plan Objective: | LLOR0701E.3 |
| Topic: | Loss of power to SDC valves |
| RO: | 2.5 |
| SRO: | 2.7 |
| KA#: | 205000 K2.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|--------|--|
| Level | RO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 205000 K2.02 2.5/2.7 | | |
| KA Statement | Shutdown Cooling System (RHR Shutdown Cooling Mode Knowledge of electrical power supplies to the following: Motor operated valves | | |
| Cognitive level | low | | |
| Safety Function | 4 | | |
| 10 CFR 55 | 41.7 | | |
| Technical Reference with Revision No: | S51.7.B ON-121 B21-1090-E-01 2 Sh. 12, C61-1050-E-01 | Rev #: | |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| Question Source: (i.e. New, Bank, Modified) | new | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

4

ID: 1454528

Points: 1.00

Unit 2 plant conditions:

- HPCI is running in full flow test (CST to CST) at 5600 gpm

A loss of Division 2 DC power occurs.

Which of the following identifies the impact, if any, on continued HPCI operation?

- A. Continues to run at 5600 gpm
- B. Div 2 isolation occurs
- C. Turbine Governor Valve closes
- D. HPCI over speed trip occurs

Answer: C

Answer Explanation

A loss of DIV 2 power to HPCI will cause HPCI speed to run back to the low setting due to loss of control power to the flow controller which feeds the Turbine Governor. DIV 2 provides power for control power, isolation circuits, all DIV 2 valves, initiation logic, aux oil pump control and turbine trip logic. HPCI is out of service and not available on loss of DIV 2.

A Plausible to candidate who does not remember loss of div 2 will close governor but recalls that the isolation is energized to operate.

B Plausible to candidate who believes that HPCI isolation logic is deenergize to operate

C Correct A loss of DIV 2 power to HPCI will cause HPCI speed to run back to the low setting due to loss of control power to the flow controller which feeds the Turbine Governor. When turbine speed drops below approximately 1000 RPM the shaft driven oil pump will not have sufficient pressure to maintain the governor valve open. a loss of div II dc will cause the aux. oil pump to lose power, so it will not be available to start on low pressure. without the aux oil pump the governor will continue to close to the full closed position.

D Plausible to candidate who believes the governor fails full open on a loss of power

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 4 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1454528 |
| User-Defined ID: | Q# 4 BANK |
| Lesson Plan Objective: | HPCI 14.A |
| Topic: | Predict Impact of Loss of Div 2 DC on HPCI Operation |
| RO: | 2.5 |
| SRO: | 2.7 |
| KA#: | 206000 K2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | | |
|-----------------|--|--|---|---------------|---------------------|
| Comments: | General Data | | | | |
| | Level | | RO | | |
| | Tier | | 2 | | |
| | Group | | 1 | | |
| | KA # and Rating | | 206000 K2.04 2.5/2.7 | | |
| | KA Statement | | High Pressure Coolant Injection System Knowledge of electrical power supplies to the following: Turbine control circuits: BWR-2,3,4 | | |
| | Cognitive level | | lower | | |
| | Safety Function | | 2 | | |
| | 10 CFR 55 | | 41.7 | | |
| | Technical Reference with Revision No: | | E41-1040-E-004, sht. 001 E41-1040-E-005, sht. 001 E41-1040-E-006, sht. 001 ARC-MCR-117, A1 | Rev #: | 26 30 36 2 |
| | Justification for Non SRO CFR Link: | | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | | bank 560442 | | |
| | Question Source: (i.e. New, Bank, Modified) | | Bank | | |
| | Low KA Justification (if required): | | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | n/a | | |
| | ILT | | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | | none | | |
| | LORT | | | | |
| | PRA: (i.e. Yes or No or #) | | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

5

ID: 1454611

Points: 1.00

Given:

- INSTRUMENT AIR HEADER A PRESSURE LO annunciator is in alarm
- INSTRUMENT AIR HEADER B PRESSURE LO annunciator is in alarm
- Instrument Air header pressure is lowering

The CRS has directed a power reduction per ON-119, Loss Of Instrument Air

Which of the following describes the bases for the power reduction?

- A. Reduce the probability of a turbine trip from lowering condenser vacuum.
- B. Reduce the transient if a SCRAM is required due to rods drifting in.
- C. Reduce the probability of inadequate feedwater should the condensate or feed pump min flow valves drift.
- D. Reduce the probability of power exceeding 100% should the feedwater heater dump valves fail open.

Answer: ~~A~~ Accept B and C *Ans 2/15/17*

Answer Explanation

1. Both inst. air header low alarms coming in is an entry condition for ON-119.
2. The bases for reducing power to 44% is to reduce the probability of a loss of adequate feedwater should the Condensate or RFP Min Flow valve begin to drift open.
3. Low Instrument Air pressure could cause CRD HCU scram valves to drift open, resulting in the associated control rods to insert. This is the Bases for manually SCRAMING the reactor if control rods start to drift in
4. Air ejector valves may fail due to loss of air causing vacuum to decrease, however ON-119 directs entry to OT-116 for loss of vacuum actions
5. Feed water dump valves may fail open on a loss of air causing a power increase, however ON-119 directs operators to OT-104 for a loss of feedwater heating

B and C are
B and C are correct for the above reasons and the distractors are plausible to the examinee who does not recall the basis for reducing power to 44%

Ans 2/15/17

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 5 Info | |
|--------------------------|-------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1454611 |
| User-Defined ID: | Q# 5 NEW |
| Lesson Plan Objective: | LGSOPS1550.03 |
| Topic: | actions for loss of air |
| RO: | 3.3 |
| SRO: | 3.4 |
| KA#: | 300000 K3.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|---|---|---|------------|----------|
| Comments: | K3.02 | | | |
| | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 1 | | |
| | KA # and Rating | 300000 K3.02 3.3/3.4 | | |
| | KA Statement | Instrument Air System (IAS) Knowledge of the effect that a loss or malfunction of the . INSTRUMENT AIR SYSTEM) will have on the following: Systems having pneumatic valves and controls | | |
| | Cognitive level | Higher | | |
| | Safety Function | 8 | | |
| | 10 CFR 55 | 41.7 | | |
| | Technical Reference with Revision No: | ON-119 P&ID M-0015 sht 4 | Re v #: | 28 40 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | N/A | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

6

ID: 1685687

Points: 1.00

Unit 1 is operating at 100% power when the following occurs:

- The speed demand signal from DFWLC for the '1A' RFP fails to 1 mA.

RPS successfully actuates, but an ATWS occurs.

One minute later, all of the logic to produce an RRCS Feedwater Runback is satisfied.

WHICH ONE of the following identifies the status of '1A' RFP two minutes after the runback logic is satisfied?

(Assume no operator action.)

- A. Running at 2300 rpm; M/A Station in control
- B. Running at 2300 rpm; MSC in control
- C. Running at the same speed as before the runback signal; MSC in control
- D. Running at the same speed as before the runback signal; M/A Station in control

Answer: C

Answer Explanation

The speed demand signal loss results in 1A RFP swapping to MSC (an automatic swap to MSC when the DFWLC output fails to 1 mA) control and "locking up" at its present speed. Since its in "lockup" prior to the Runback, it will NOT respond to the Runback signal.

'C' is correct for the above reasons.

'A', 'B' are wrong. Plausible to the examinee who forgets that the pre-existing lockup inhibits that RFP from responding to the runback.

'D' is wrong. Control will not swap back to or stay in M/A station control.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 6 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 2.50 |
| System ID: | 1685687 |
| User-Defined ID: | Q # 6 |
| Lesson Plan Objective: | LOT-0550, OBJ4 |
| Topic: | RFP Speed Signal Loss - RFP Response to RRCS FW R/B Signal |
| RO: | 3.7 |
| SRO: | 3.7 |
| KA#: | 259002 K3.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|--|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 1 | |
| | KA # and Rating | 259002 K3.02 3.7/3.7 | |
| | KA Statement | Reactor Water Level Control System Knowledge of the effect that a loss or malfunction of the REACTOR WATER LEVEL CONTROL SYSTEM will have on following: Reactor feedwater system | |
| | Cognitive level | higher | |
| | Safety Function | 2 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | S06.1.H U/1 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 556015 | |
| | Question Source: (i.e. New, Bank, Modified) | bank | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

7

ID: 1454748

Points: 1.00

Unit 2 plant conditions are as follows:

- 100% Reactor Power
- Normal Electrical Lineup

The following sequence of events occurs:

- t = 0 seconds RPV level drops below -129 inches
- t = 20 seconds 201 Safeguard Bus < 70% bus voltage

Which of the following identifies the closed D23 Bus Source Breaker **AND** the status of the "2C" RHR Pump Breaker at T=75 seconds?

| | <u>CLOSED D23 BUS SOURCE BREAKER</u> | <u>"2C" RHR PUMP BREAKER</u> |
|----|---|---|
| A. | 101-D23 | Open |
| B. | 101-D23 | Closed |
| C. | D23 DG Output Breaker | Open |
| D. | D23 DG Output Breaker | Closed |

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Correct Answer

D23 DG Output Breaker closed

D23 DG started on the LOCA signal. Since it had been running for greater than 10 seconds before the loss of power, the DG is ready to be loaded and the 0.5 second closing signal from the D23 Bus Under voltage logic will allow the D23 DG Output Breaker to close before the 1.0 second Dead Bus Transfer closing. Since the time frame between the initial start signal for the "2C" RHR Pump (LOCA signal) and the subsequent restart signal after the D23 Bus is re-energized by the D23 DG is greater than 2.0 seconds, the charging motor on the "2C" RHR Pump breaker will fully charge the closing springs on the breaker, and the anti-pumping relay will not seal-in, which will allow the breaker to reclose.

Distracters

101-D23 open

This answer is incorrect because the D23 DG Output Breaker will close (0.5 second time delayed closure) before the 101-D23 Breaker (1.0 second time delayed closure), since the D23 DG was previously running and was in a "ready-to-load" status. Since the time frame between the initial start signal for the "2C" RHR Pump (LOCA signal) and the subsequent restart signal after the D23 Bus is re-energized by the D23 DG is greater than 2.0 seconds, the charging motor on the "2C" RHR Pump breaker will fully charge the closing springs on the breaker, and the anti-pumping relay will not seal-in, which will allow the breaker to reclose after the D23 DG Output Breaker closes. The "2C" RHR Pump will not remain shutdown.

101-D23 closed

This answer is incorrect because the D23 DG Output Breaker will close (0.5 second time delayed closure) before the 101-D23 Breaker (1.0 second time delayed closure), since the D23 DG was previously running and was in a "ready-to-load" status. Since the time frame between the initial start signal for the "2C" RHR Pump (LOCA signal) and the subsequent restart signal after the D23 Bus is re-energized by the D23 DG is greater than 2.0 seconds, the charging motor on the "2C" RHR Pump breaker will fully charge the closing springs on the breaker, and the anti-pumping relay will not seal-in, which will allow the breaker to reclose after the D23 DG Output Breaker (not the 101-D23 Breaker) closes. The "2C" RHR Pump will not remain shutdown.

D23 DG Output Breaker open

This answer is incorrect because the time frame between the initial start signal for the "2C" RHR Pump (LOCA signal) and the subsequent restart signal after the D23 Bus is re-energized by the D23 DG is greater than 2.0 seconds, the charging motor on the "2C" RHR Pump breaker will fully charge the closing springs on the breaker, and the anti-pumping relay will not seal-in, which will allow the breaker to reclose after the D23 DG Output Breaker (not the 101-D23 Breaker) closes. The "2C" RHR Pump will not remain shutdown.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 7 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| | |
| System ID: | 1454748 |
| User-Defined ID: | Q# 7 BANK |
| Lesson Plan Objective: | LGSOPS0092.5A |
| | |
| Topic: | Unit 2 plant conditions are as follows: - 100% Reactor Power - Normal Electrical Lineup The |
| RO: | 3.1 |
| SRO: | 3.4 |
| KA#: | 262001 K4.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | | |
| | Group | | |
| | KA # and Rating | 262001 K4.04 2.8/3.1 | |
| | KA Statement | A.C. Electrical Distribution Knowledge of A.C. ELECTRICAL DISTRIBUTION design feature(s) and/or interlocks which provide for the following: Protective relaying | |
| | Cognitive level | Higher | |
| | Safety Function | | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | E-160, E-164 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 737416 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | y | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

8

ID: 1454749

Points: 1.00

Unit 1 plant conditions:

- Reactor scrammed; all control rods fully inserted
- RPV level is -7", steady
- Drywell pressure is 6.5 psig, up slow
- 1A RHR Pump is operating in Suppression Pool Spray
- All other low pressure ECCS pumps are secured

Wide range level instrument LIS-42-1N691A, which inputs to ADS, fails downscale.

Assuming no operator action, which of the following identifies the impact on the ADS SRVs?

- A. Remain closed
- B. Open immediately
- C. Open in 105 seconds
- D. Open in 525 seconds

Answer: A

Answer Explanation

| | A | E | C | G |
|-------------------|------------|------------|------------|------------|
| DW (1.68) | X (or 420) | X (or 420) | X (or 420) | X (or 420) |
| Rx Level (-129) | X | X | X | X |
| Conf Level (12.5) | X | | X | |
| T.D. (105) | X | | X | |
| 125# RHR A/C | O | O | | |
| 145# A CS | O | | | |
| 145# C CS | | O | | |
| 125# B/D RHR | | | O | O |
| 145# B CS | | | O | |
| 145# D CS | | | | O |
| Energizes | K6A | K6E | K6C | K6G |

With RPV Level < 12.5" and Drywell Pressure > 1.68# and the "1A" RHR pump running, the 105 sec time delay and -129" on both A and E channels is needed. The failed instrument in the stem (LIS-42-1N691A,C,E or G) provides the -129" input to one channel, but not to the other channel. Therefore, ADS does not initiate.

System design is such that -129 signals are required for 1 division to initiate to prevent inadvertent isolation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 8 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1454749 |
| User-Defined ID: | Q# 8 BANK |
| Lesson Plan Objective: | LGSOPS005.03F |
| Topic: | Impact of failed level instrument on ADS |
| RO: | 3.7 |
| SRO: | 3.9 |
| KA#: | 218000 K4.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|--|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 1 | |
| | KA # and Rating | 218000 K4.01 3.7/3.9 | |
| | KA Statement | Automatic Depressurization System Knowledge of AUTOMATIC DEPRESSURIZATION SYSTEM design feature(s) and/or interlocks which provide for the following: Prevent inadvertent initiation of ADS logic | |
| | Cognitive level | lower | |
| | Safety Function | 3 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | see explanation | Rev #: |
| | Justification for Non SRO CFR Link: | N/A | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | 2005 cert | |
| | Question Source: (i.e. New, Bank, Modified) | bank 562181 | |
| | Low KA Justification (if required): | N/A | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | y | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

9

ID: 1455668

Points: 1.00

Unit 1 is operating at full power when 113 B5 CORE SPRAY LINE INTERNAL BREAK alarm actuates and will not clear. An equipment operator reports that Core Spray differential pressure transmitter PDT-052-1N056 indicates +2.1 psid.

Given the following from the annunciator response card

OPERATOR ACTIONS:

NOTE: Alarm designed to indicate failure of one of the core spray loop piping between the vessel penetration AND the core shroud penetration. Normal rated power shroud/annulus dP is 7.5 psid. A valid value of greater than +1.3 or less than -3.8 psid indicates a failure of the core spray piping outside the shroud. A value of greater than +7.5 psid or less than -10.0 psid indicates a failure of the core spray piping outside the vessel. A failure between the vessel AND containment would be measured by the containment leakage detection systems. This instrument loop is very noisy due to the condensation of steam inside the core spray piping AND also sensing pressures inside the shroud. Spurious alarms that immediately clear should NOT be considered valid.

For a subsequent loss of high pressure injection;

Which of the following lists the heat removal capabilities of the affected Core Spray system?

- A. Effective for BOTH core submergence AND spray cooling
- B. NOT effective for EITHER core submergence OR for spray cooling
- C. Effective for spray cooling but NOT for core submergence
- D. Effective for core submergence but NOT for spray cooling

Answer: D

Answer Explanation

ARC-113-B5 alarm indicates an A loop leak in the annulus is detected. This break prevents core spray flow from reaching the spray nozzles, located above the core. But since the line break is in the annulus, core spray flow will discharge through the break into the annulus, which can provide water for core submergence. Answer D is correct and answer A, B, and C are incorrect but plausible to the examinee who miss understands the information provided, or does not understand the design features of the reactor vessel and internals.

A Incorrect plausible to the examinee who miss interprets the information in the ARC and believe the value +2.1 is in the acceptable range

B Incorrect plausible to the examinee who does not recognize the line break is in the annulus, core spray flow will discharge through the break into the annulus, which can provide water for core submergence.

C Incorrect plausible to the examinee who confuses spray and submergence cooling

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 9 Info | |
|--------------------------|-------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 4.00 |
| System ID: | 1455668 |
| User-Defined ID: | Q# 9 BANK |
| Lesson Plan Objective: | LLOT035.10A |
| Topic: | Core spray cooling mode |
| RO: | 2.8 |
| SRO: | 2.9 |
| KA#: | 209001 K5.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|--------|-------------|
| Level | RO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 209001 K5.04 2.8/2.9 | | |
| KA Statement | Low Pressure Core Spray System Knowledge of the operational implications of the following concepts as they apply to LOW PRESSURE CORE SPRAY SYSTEM : Heat removal (transfer) mechanisms | | |
| Cognitive level | High | | |
| Safety Function | 2 | | |
| 10 CFR 55 | 41.5 | | |
| Technical Reference with Revision No: | ARC-MCR-113-B5 | Rev #: | 0 0 0 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 510688 Oyster creek modified | | |
| Question Source: (i.e. New, Bank, Modified) | bank 510688 Oyster creek modified | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 510688 Oyster creek modified | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

10

ID: 1671166

Points: 1.00

Unit 1 is operating at 100% power.

1 UNIT DIV 1 SFGD BATTERY CHARGERS TROUBLE (120 G-1) alarms.

An EO reports that the 480 VAC MCC supply breaker for the 1A1D103 Battery Charger has tripped.

WHICH one of the following is supplying power for Div 1 DC loads?

- A. 1A1 Battery, ONLY
- B. 1A2D103 Battery Charger, ONLY
- C. 1A1 AND 1A2 Batteries
- D. 1A1 Battery AND 1A2D103 Battery Charger

Answer: D

Answer Explanation

The Division I DC Distribution system has 2 batteries and each battery has a battery charger. The battery chargers are the normal source of power for the DC system. With a trip of one of the battery chargers, the associated battery will begin to discharge. The second battery charger will continue to supply the DC bus.

ARC-MCR-120 G-1, E-33 sh. 1, E-92 sh. 1

1A1 Battery only is plausible as a source but incomplete without the A2 side of the battery

1A2D103 Battery Charger only is plausible but incomplete answer without A1

1A1 and 1A2 Batteries is plausible but incorrect as the 1A2D103 charger is still functioning and supplying the bus.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 10 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 1.00 |
| System ID: | 1671166 |
| User-Defined ID: | Q#10 BANK |
| Lesson Plan Objective: | LLOR0605D.01 |
| Topic: | Unit 1 is at 100% Reactor power. 1 UNIT DIV 1 SFGD BATTERY CHARGERS TROUBLE (120 G-1) alarms. An E |
| RO: | 3.2 |
| SRO: | 3.3 |
| KA#: | 263000 K1.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|--------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 1 | | |
| | KA # and Rating | 263000 K1.02 | | |
| | KA Statement | D.C. Electrical Distribution Knowledge of the physical connections and/or causeeffect relationships between D.C. ELECTRICAL DISTRIBUTION and the following: Battery charger and battery | | |
| | Cognitive level | higher | | |
| | Safety Function | 6 | | |
| | 10 CFR 55 | 41.5 | | |
| | Technical Reference with Revision No: | E-0092 sht1 E-0033 sh. ARC-MCR-120 G-1 | Rev #: | 3 1 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 562594 | | |
| | Question Source: (i.e. New, Bank, Modified) | bank 562594 | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 562594 | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | Y | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | A | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

11

ID: 1454874

Points: 1.00

A LOCA occurs on Unit 2 which results in the following conditions:

- RPV level drops to -140" before being restored to +20" with low pressure ECCS
- All Unit 2 diesels are running unloaded
- The PRO has been directed to synchronize D23 D/G with the 201 Safeguard Bus.
- Before this can be performed, D23 D-G TROUBLE (221 B-1) alarms in the MCR.
- An EO dispatched to D23 reports that "J.W. TEMP HIGH" is in alarm at 2C-C514 panel and actual Jacket water temperature is 200°F.

WHICH ONE of the following describes the response of the D23 Diesel Generator if the "Diesel Generator Auto Start Signal Bypass" (BYPASSED) pushbutton PB/CG001 is depressed?

- A. Diesel will trip
- B. Diesel will continue to run in isochronous mode
- C. Diesel converts from droop to isochronous mode
- D. Diesel converts from isochronous to droop mode

Answer: A

Answer Explanation

On a LOCA signal, the diesel will start in the isochronous mode. To synchronize the engine it must be converted to droop. To perform this, the operator must first depress the DG AUTO START BYPASS pushbutton to de-energize the LOCA start logic for the diesel and closes a permissive in the control switch logic to allow energization of the droop relay. Once this has been performed, the diesel control switch in the MCR must be placed to start. This will place the diesel in the droop mode of operation. However, if any trips that are normally bypassed are present when the DG AUTO START pushbutton is depressed, the engine will trip due to the LOCA relay being de-energized by the pushbutton. Ref. caution in S92.7.N. the distractors are plausible to the examinee who does not recall that the TRIP bypass will go away when the LOCA is reset and C also requires the examinee to misinterpret droop and isochronous operation. Hi temp trip is bypassed on LOCA signal

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | |
|--------------------------|--|
| Question 11 Info | |
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.80 |
| System ID: | 1454874 |
| User-Defined ID: | Q# 11 BANK |
| Lesson Plan Objective: | LGSOPS0092B.10F |
| Topic: | Effect on Diesel running on LOCA due to depressing AUTO START BYPASS with High Lube Oil Temp present |
| RO: | 3.8 |
| SRO: | 3.9 |
| KA#: | 264000 K6.07 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | |
|---|--|--------|
| Level | RO | |
| Tier | 2 | |
| Group | 1 | |
| KA # and Rating | 264000 K6.07 3.8/3.9 | |
| KA Statement | Emergency Generators (Diesel/Jet) Knowledge of the effect that a loss or malfunction of the following will have on the EMERGENCY GENERATORS (DIESEL/JET) :Cooling water system | |
| Cognitive level | high | |
| Safety Function | 6 | |
| 10 CFR 55 | 41.7 | |
| Technical Reference with Revision No: | S92.7.N | Rev #: |
| Justification for Non SRO CFR Link: | n/a | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 554174 | |
| Question Source: (i.e. New, Bank, Modified) | bank | |
| Low KA Justification (if required): | bank | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | modified to better match K.A | |
| ILT | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| LORT | | |
| PRA: (i.e. Yes or No or #) | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

12

ID: 1600748

Points: 1.00

Unit 1 is at 100% power when a malfunction in the Reactor Enclosure Cooling Water system (RECW) causes the following:

- A rising trend in RWCU Non-Regenerative Heat Exchanger outlet temperature.

Current Non-Regenerative Heat Exchanger outlet temperature is 128 ° F

Temperature is rising at constant rate of 2 ° F/min

Which of the choices correctly completes the following statement?

A RWCU isolation signal will actuate in ____ (1) ____ minutes, reactor coolant ____ (2) ____ will rise if the isolation fails to occur.

- A. (1) 3.5
(2) pH
- B. (1) 3.5
(2) conductivity
- C. (1) 6
(2) pH
- D. (1) 6
(2) conductivity

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

The RWCU system is operated using S44.0.A, "OPERATING RWCU TO MEET PLANT CONDITIONS" (among other procedures). Within this procedure one of the system Precautions is:

3.7 RWCU system will isolate at 140°F at outlet of Non-regenerative Heat Exchanger.

DBD 3.2.5.1

Basis - Non-Regenerative Heat Exchanger Outlet Temperature

The limit on the Non-Regen HX outlet temperature is required to protect the filtering and ion exchange medium (resin) used in the F/Ds. Excessive temperatures can cause the resin to disintegrate and dissolve in the reactor water, compounding contamination and radiation problems. The controlling parameter value of 140F is established by the system specification {6.1.2.1}.

ON-116

2.3 IF Reactor Water Conductivity is greater than 1.0 umho/cm with main steam line (MSL) radiation high

AND Reactor Water pH low (Resin or other organic intrusion is suspected),
THEN PERFORM the following:

2.3.1 IF MSL radiation rises to 1.5 x normal full power background,

THEN ENTER ON-102

AND EXECUTE concurrently.

2.3.2 **DETERMINE** RWCU Demin that could be passing resin by identifying demin with high effluent conductivity (suspect demin recently placed in service).

- A Wrong - Plausible to the student who either recalls the isolation set point incorrectly or performs the calculation incorrectly, also plausible to the student who incorrectly recalls (reverses) the Affect on conductivity and PH
- B Wrong - Plausible to the student who either recalls the isolation set point incorrectly or performs the calculation incorrectly.
- C Wrong - plausible to the student who incorrectly recalls (reverses) the Affect on conductivity and PH
- D Correct for the above reasons - Isolation occurs at 140 F. At a rate of rise of 2 degrees/minutes the isolation will occur after 6 minutes (rise of 12 degrees F). and conductivity rises and PH lowers

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 12 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 2 |
| Difficulty: | 3.00 |
| System ID: | 1600748 |
| User-Defined ID: | Q #12 NEW |
| Lesson Plan Objective: | LGSOPS0044.05 (RWCU) |
| Topic: | RWCU - Expain and apply all system limits and precautions |
| RO: | 2.9 |
| SRO: | 3.3 |
| KA#: | 400000 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 1 | |
| | KA # and Rating | 400000 K3.01 2.9/3.3 | |
| | KA Statement | Component Cooling Water System (CCWS) Knowledge of the effect that a loss or malfunction of the following will have on the CCWS: Loads cooled by CCWS . | |
| | Cognitive level | higher | |
| | Safety Function | 8 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | LGSOPS0010 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | |
| | Question Source: (i.e. New, Bank, Modified) | new | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

13

ID: 1454932

Points: 1.00

Unit 1 was operating at 100% power when a LOCA occurred.
Plant conditions are as follows

- Reactor level is -150 inches, being controlled with LPCI

Which of the following describes (1) the source of water to the LPCI unit coolers and (2) where the cooling water is returning? *2 minutes after reactor level reaches -150 inches? Rsp 1/27/17*
(Assume no operator action)

- A. (1) Service Water
(2) Cooling Tower
- B. (1) Service Water
(2) Spray Pond
- C. (1) ESW
(2) Cooling Tower
- D. (1) ESW
(2) Spray Pond

Answer: B

Answer Explanation

At -129 inches a loca signal will start the diesel generators and the ESW pumps. However, since there is no loss of off site power service water will still be running. The examinee must realize that service water is at a higher pressure than ESW and service water will keep the ESW supply check valve closed and continue to supply the unit coolers. On the return header the the air operated valves will realign on the ESW pump start causing the return path to realign from the cooling tower to the Spray Pond.

For the above reasons B is correct. The distractor are plausible to the examinee who does not recall that Service Water is at a higher pressure than ESW or incorrectly recalls the return flow path arrangement

- A Incorrect plausible to the examinee who does not recall that at -129 inches LOCA signal will start the Diesel generators which will cause the ESW pumps to start. however service water is at a higher pressure so it will supply the loads. When the ESW pump starts the valve line up for ESW return path swaps from the cooling towers to the spray pond.
- B Correct service water is at a higher pressure and supplying the loads and ESW return path is aligned to the spray pond
- C Incorrect plausible to the examinee who does not recall that at -129 inches LOCA signal will start the Diesel generators which will cause the ESW pumps to start. however service water is at a higher pressure so it will supply the loads. When the ESW pump starts the valve line up for ESW return path swaps from the cooling towers to the spray pond.
- D Incorrect plausible to the examinee who does not recall that at -129 inches LOCA signal will start the Diesel generators which will cause the ESW pumps to start. however service water is at a higher pressure so it will supply the loads.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 13 Info | |
|--------------------------|------------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| | |
| System ID: | 1454932 |
| User-Defined ID: | Q# 13 NEW |
| Lesson Plan Objective: | LOT051.16I |
| | |
| Topic: | LPCI component cooling water |
| RO: | 2.9 |
| SRO: | 2.9 |
| KA#: | 203000 A1.09 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|--------|--------|
| Level | RO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 203000 A1.09 2.9/2.9 | | |
| KA Statement | RHR/LPCI: Injection Mode (Plant Specific) Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) controls including: Component cooling water systems | | |
| Cognitive level | lower | | |
| Safety Function | 2 | | |
| 10 CFR 55 | 41.5 | | |
| Technical Reference with Revision No: | M-0011 sht2 | Rev #: | 9 2 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| Question Source: (i.e. New, Bank, Modified) | new | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

14

ID: 1455377

Points: 1.00

The SPDS MSIV Event Indicator is showing MSIVs SHUT, with a green border.

Which of the following situations can cause this display?

- A. MSIVs have received an isolation command, but are still full open.
- B. MSIVs have received an isolation command, and are stroking closed.
- C. MSIVs are closed manually, with an isolation command present.
- D. MSIVs are closed manually, with NO isolation command present.

Answer: D

Answer Explanation

COLOR CODING CONVENTION:

- a. MAGENTA = bad data, which means a signal is out of range, or there has been a system failure.
- b. RED = Alarm condition exists. One or more of the associated points have exceeded their setpoints.
- c. YELLOW = Off-normal condition exists. One or more of the associated points are approaching their operating limits (e.g. Rx water level approaching scram point); an important plant event is initiated (e.g. ADS timer initiated); insufficient information available to validate a control parameter (or disagreement of data).
- d. GREEN = Safe condition exists. Normal operating parameters present.
- e. CYAN = Sufficient data available to validate control parameters; indicates normal/satisfactory operation of systems/equipment.
- f. DARK BLUE = System/component is INACTIVE.
- g. WHITE = Active / permissive conditions exists.
- h. "BLINKING" = Used to ALERT the operator of a dynamic condition which requires acknowledgment.

- A Incorrect plausible to the examinee who believe the shut indication means that MSIV received an isolation command and that green indicates that they have not reposition
- B Incorrect plausible to examinee who believes green indication is activated when MSIV red light goes out (this will cause MSIV to indicate closed) but fails to recognize that green SPDS indication is normal operating parameters
- C Incorrect plausible to examinee who believe green is closed and does not apply red exceeding setpoint to the MSIV indication
- D Correct MSIV's where shut with no isolation signal (manually closed)

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 14 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455377 |
| User-Defined ID: | Q# 14 BANK |
| Lesson Plan Objective: | LGSOPS0038B.1 |
| Topic: | ERFDS Critical Plant Variables display, format 00 |
| RO: | 2.5 |
| SRO: | 2.8 |
| KA#: | 223002 A1.03 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 1 | |
| | KA # and Rating | 223002 A1.03 2.5/2.8 | |
| | KA Statement | Primary Containment Isolation System/Nuclear Steam Supply Shut-Off Ability to predict and/or monitor changes in parameters associated with operating the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF controls including: SPDS/ERIS/CRIDS/GDS: Plant-Specific | |
| | Cognitive level | lower | |
| | Safety Function | 5 | |
| | 10 CFR 55 | 41.5 | |
| | Technical Reference with Revision No: | LGSOPS0038B | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 562321 | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 562321 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 562321 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

15

ID: 1455388

Points: 1.00

Unit 1 is operating at 100% power with the following conditions:

- RT-6-041-490-1, Suppression Pool Gross Input Leak Rate Determination is being performed
- Per the above RT, the last RT-6-041-230-1 MSRV tailpipe temperature data monitoring information is retrieved and the data for the A SRV is shown below.

ATTACHMENT 1
Page 1 of 1
MSRV PERFORMANCE DATA

| SRV | Date/Time RX Power RX Press | 4 / 22 / 16 02:00 | 4 / 22 / 16 08:00 | 4 / 22 / 16 14:00 |
|-----|-----------------------------------|--------------------|--------------------|--------------------|
| | | 100 % 1044 PSIG | 100 % 1044 PSIG | 100 % 1044 PSIG |
| A | Tailpipe Temp | 141 °F | 141 °F | 141 °F |
| | Pilot Temp | 505 °F | 505 °F | 505 °F |

Which of the following combinations of pilot valve temperature and tailpipe temperature would indicate leakage past the pilot valve seat?

| | Pilot valve temperature | Tailpipe temperature |
|----|-------------------------|----------------------|
| A. | 499 degrees F | 140 degrees F |
| B. | 499 degrees F | 150 degrees F |
| C. | 511 degrees F | 140 degrees F |
| D. | 511 degrees F | 150 degrees F |

Answer: B

Answer Explanation

B is correct temperature is lower than base line temperature due to the cooling effect of the steam flow and the pressure drop of the steam. leakage past the seat will end up in the tailpipe causing tailpipe temperature to rise

A incorrect plausible to the examinee who recalls temperature will lower due to the cooling effect of the steam flow and the pressure drop of the steam. A pilot valve temperature decrease without a rise in tailpipe temperature is indicative of srvc external leakage into the drywell

C incorrect plausible to the examinee who believes that the stagnant steam in the line would be replaced with 545 degree reactor steam but neglects the cooling effect of flow and pressure drop and does not know where pilot valve leakage goes

D Incorrect but plausible for the reasons described above

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 15 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455388 |
| User-Defined ID: | Q# 15 NEW |
| Lesson Plan Objective: | LGSOPS001 |
| Topic: | Determine pilot leakage tailpipe temperature for leaking SRV |
| RO: | 3.1 |
| SRO: | 3.2 |
| KA#: | 239002 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|---|---|---|--------|------------------|
| Comments: | General Data | | | |
| | | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 1 | | |
| | KA # and Rating | 239002 A2.02 3.1/3.2 | | |
| | KA Statement | Relief/Safety Valves Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Leaky SRV | | |
| | Cognitive level | higher | | |
| | Safety Function | 3 | | |
| | 10 CFR 55 | 41.5 | | |
| | Technical Reference with Revision No: | OT-114 RT-6-041-490-1 | Rev #: | 3 5 2 5 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e, A-Systems or B-Procedures) | | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

16

ID: 1455407

Points: 1.00

A Reactor Startup is in progress with the following conditions:

- Reactor is critical on a stable, positive period
- Reactor power is on range 3 of the IRMs
- The RO is withdrawing SRMs
- The RO continues to up range the IRMs until all IRMs are on range 8

Then a malfunction in the '1A' SRM causes count rate to rise to 2×10^5 cps.

Given the above, which one of the following is correct regarding,

(1) Any alarms received

AND

(2) Any required actions directed by plant procedures that would allow the startup to continue?

- A. (1) SRM rod block AND upscale alarm.
(2) Bypass SRM "A".
- B. 1) SRM rod block AND upscale alarm.
(2) Place SRM "A" in standby.
- C. (1) Upscale alarm but NOT SRM rod block.
(2) Place SRM "A" in standby.
- D. 1) Upscale alarm but NOT SRM rod block.
(2) Bypass SRM "A".

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

A. Incorrect: If any SRM channel detects $> 1 \times 10^5$ cps, a rod block is activated. This rod block is bypassed if:

- The mode switch is in RUN
 - The associated IRM range switches are at range 8 or above
- Since the IRMs are on range 8, the rod block would not occur.
IAW the ARC107 H4 the directed action is to bypass the SRM.

B. Incorrect: Taking the function switch out of operate will cause an INOP/upscale alarm.

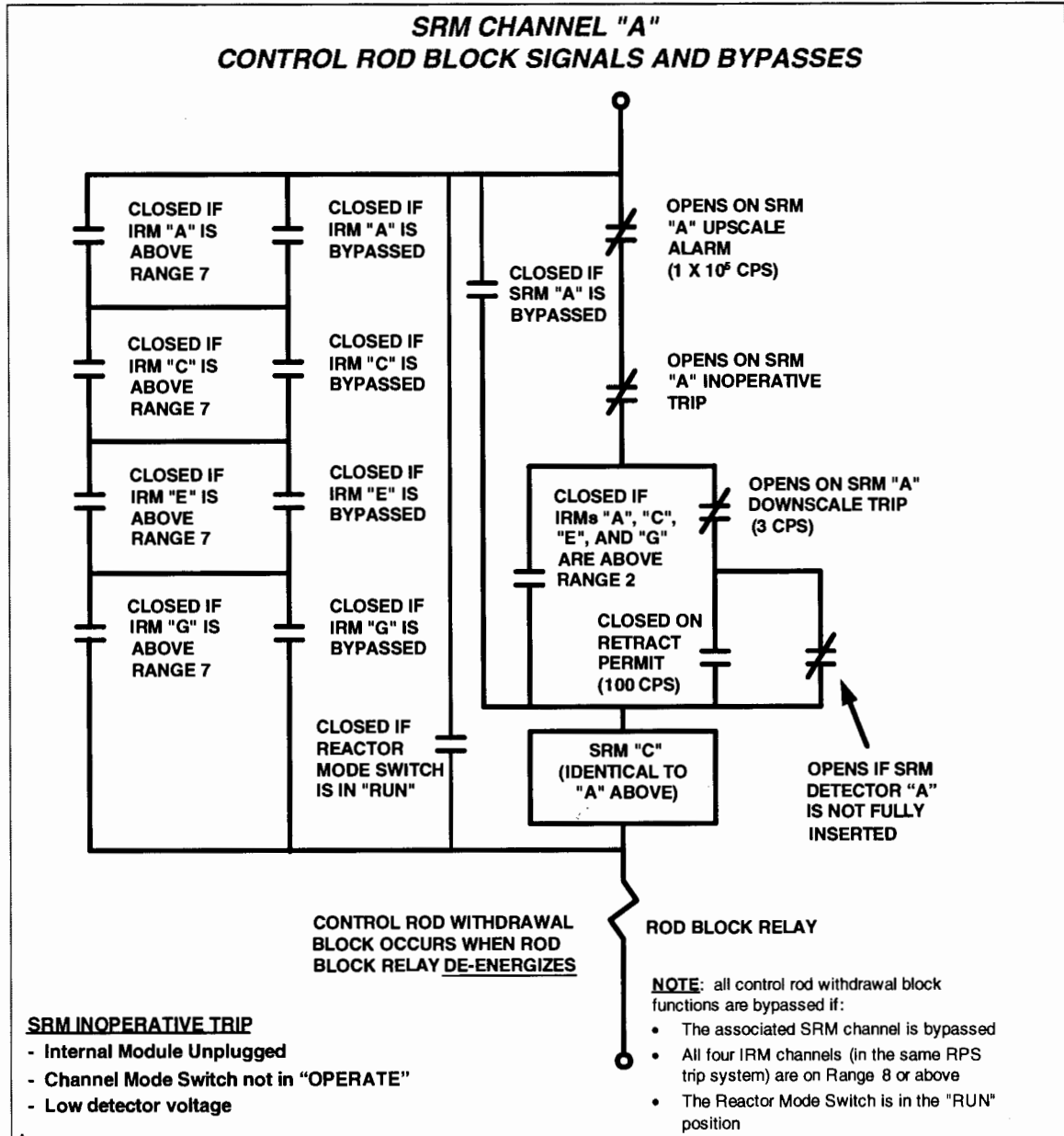
Plausible if the candidate does not remember that taking the function switch out of Operate will cause an INOP trip. Additionally this action is not directed by any plant procedure.

D. Correct: Upscale alarm The IRMs on range 8 or higher. ARC-MCR-107 H4 directs bypassing the SRM.

C. Incorrect: This action is not authorized by the ARC and will generate an INOP TRIP alarm

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO



EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 16 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.50 |
| System ID: | 1455407 |
| User-Defined ID: | Q# 16 MODIFIED |
| Lesson Plan Objective: | LGSOPS0074.6 |
| Topic: | Predict Response to SRM Count rate dropping |
| RO: | 3.3 |
| SRO: | 3.5 |
| KA#: | 215004 A2.05 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|--------|--|
| Level | RO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 215004 A2.05 3.3/3.5 | | |
| KA Statement | Source Range Monitor (SRM) System Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Faulty or erratic operation of detectors/system | | |
| Cognitive level | higher | | |
| Safety Function | 7 | | |
| 10 CFR 55 | 41.5,41.6,41.7 | | |
| Technical Reference with Revision No: | ARC-107-G4 ARC-107-I4 | Rev #: | |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | Modified NRC bank see revision history | | |
| Question Source: (i.e. New, Bank, Modified) | Modified | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Modified | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

17

ID: 1455428

Points: 1.00

Unit 1 plant conditions are as follows:

- Reactor STARTUP is in progress
- Reactor power is 20%
- 1B RPS/UPS, "Inverter AC Feed Switch" is aligned to Primary Alternate Supply

During the startup the following alarms on MCR PNL 122 annunciate:

- 1B RPS & UPS STATIC INVERTER TROUBLE
- 1DB-1 250 VDC MCC UNDERVOLTAGE
- 1DB-2 250 VDC MCC UNDERVOLTAGE

All RPS white status lights are lit.

WHICH ONE of the following identifies the source currently providing power to "1B" RPS?

- A. 480VAC Non-Safeguard **NOT** bypassing the RPS/UPS inverter
- B. 480VAC Non-Safeguard bypassing the RPS/UPS inverter
- C. TSC UPS Inverter **NOT** bypassing the RPS/UPS Inverter
- D. TSC UPS Inverter bypassing the RPS/UPS Inverter

Answer: C

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | |
|-------------------|---|
| DISTRACTOR | 480VAC Non-Safeguard not bypassing the RPS/UPS Inverter – This is incorrect answer because the DC supply is the normal preferred source from 1DB-1 250 VDC MCC. The primary alternate supply is from the TSC UPS Inverter (144D-C-F) and the Secondary Alternate supply is from Non Safeguard 480 VAC MCC 124A-G-F for the 1B Inverter. Per the conditions stated, The primary alternate is selected on the Inverter AC Feed Selector Switch and the RPS inverter static switch will auto swap to the selected supply which in this case is the primary alternate supply. In this stated condition the AC supply is not bypassing the RPS inverter, but is going through the inverter. |
| ANSWER | TSC UPS Inverter not bypassing the RPS/UPS Inverter – This answer is correct because the conditions do not state that the Inverter is bypassed. The conditions also state that the primary Alternate Supply is selected which is the TSC MCC supply. The inverter can be manually bypassed by procedure if the inverter fails to auto swap utilizing the maintenance BYPASS switch. |
| DISTRACTOR | TSC UPS Inverter bypassing the RPS/UPS Inverter – This answer is incorrect because the conditions do not state that the Inverter is bypassed. The conditions also state that the Secondary Alternate Supply is selected which is not the TSC MCC supply. The inverter can be manually bypassed by procedure if the inverter fails to auto swap utilizing the maintenance BYPASS switch. |
| DISTRACTOR | 480VAC Non-Safeguard bypassing the RPS/UPS Inverter – This answer is partially correct by identifying the correct Secondary Alternate AC supply but is incorrect because the inverter is not Manually bypassed using the maintenance BYPASS switch. |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 17 Info | |
|--------------------------|-------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1455428 |
| User-Defined ID: | Q# 17 MODIFIED |
| Lesson Plan Objective: | LGSOPS0071.2A |
| Topic: | RPS/UPS static inverter |
| RO: | 2.8 |
| SRO: | 3.1 |
| KA#: | 262002 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|------------------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 1 | | |
| | KA # and Rating | 262002 A3.01 2.8/3.1 | | |
| | KA Statement | Uninterruptable Power Supply (A.C./D.C.) Ability to monitor automatic operations of the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) including: Transfer from preferred to alternate source | | |
| | Cognitive level | lower | | |
| | Safety Function | 6 | | |
| | 10 CFR 55 | 41.7 | | |
| | Technical Reference with Revision No: | S94.1.A E-0032 sht 1 | Rev #: | 1 8 6 4 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | 2010 lgs NRC exam 995089 bu cert modified | | |
| | Question Source: (i.e. New, Bank, Modified) | 2010 lgs NRC exam | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 2010 lgs NRC exam | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

18

ID: 1455088

Points: 1.00

Unit 2 is operating at 100% power when a loss of feedwater occurs.

RPV water level drops to -43" before recovering to +35".

RO Scram actions are complete and ALL automatic scram signals are either clear or bypassed.

The RO places the RPS RESET switch to 'GP 1/4' then to 'GP 2/3' positions:

- No other operator actions are taken

WHICH ONE of the following identifies the status of RPS and the SCRAM air header?

- A. Reset
Pressurizing
- B. Reset
NOT Pressurizing
- C. NOT reset
Pressurizing
- D. NOT reset
NOT Pressurizing

Answer: B

Answer Explanation

Because RPV level dropped below -38", ARI also initiated. Although the RO has successfully reset RPS, the "no other operator actions" statement means that the RO has not reset ARI. Thus, RPS is reset, but the HCU Scram Valves (Inlet/Outlet) are still open; i.e., until ARI is reset, the ARI Valves remain open, blocking/venting the scram air header, with no air to the actuators needed to re-close the Scram Valves.

- A Incorrect plausible to examinee who does not recognize that ARI has not been reset so the scram air header will not pressurize
- B Correct RPS will reset but the scram air header will not pressurize
- C incorrect plausible to the examinee who believes placing the RPS reset switch to 'GP 1/4' and 'GP 2/3' positions will allow the air header to pressurize independent of RPS reset
- D Incorrect plausible to the examinee who believe ARI must be reset in order to reset RPS

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 18 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455088 |
| User-Defined ID: | Q# 18 BANK |
| Lesson Plan Objective: | LLOT0046.4G |
| Topic: | Actions Required to Reset a Scram that included RPV level dropping to -38" |
| RO: | 3.6 |
| SRO: | 3.6 |
| KA#: | 212000 A.07 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|--|---|---|--------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 1 | |
| | KA # and Rating | 212000 A3.07 3.6/3.6 | |
| | KA Statement | 212000 Reactor Protection System Ability to monitor automatic operations of the REACTOR PROTECTION SYSTEM including: SCRAM air header pressure | |
| | Cognitive level | High | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | GP-11 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 1244449, 553971 | |
| | Question Source: (i.e. New, Bank, Modified) | bank | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | minor revision to match KA | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| LORT Question Section: (i.e., A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

19

ID: 1455570

Points: 1.00

Unit 2 is operating at 85% power with both Recirc Pumps in service.

I&C discovers an error in the recently completed 'B' Recirc Loop (Drive) Flow surveillance:

- Indicated 'B' Recirc Loop Flow is LOWER than actual flow

As a result of this discovery, which of the following APRM, Simulated Thermal Power (STP) trip setpoints are affected, (if any)?

- A. 1,2,3, and 4
- B. 1 and 3 only
- C. 2 and 4 only
- D. No APRM STP trip setpoints are affected

Answer: A

Answer Explanation

A is correct the examinee must recall that A and B recirc loop flows are summed and used by all APRM STP and displayed on the ODA's

B Incorrect plausible to the examinee who believes B recirc loop only provides input to 2 of 4 APRM STP indication on the ODA

C incorrect plausible to the examinee who believes B recirc loop only provides input to 2 of 4 APRM STP indication on the ODA

D Incorrect plausible to the examinee who does not recall how APRM STP is calculated

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 19 Info | |
|--------------------------|----------------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455570 |
| User-Defined ID: | Q# 19 NEW |
| Lesson Plan Objective: | LGSOPS0074B.13B |
| Topic: | ODA setpoint shange in core flow |
| RO: | 3.6 |
| SRO: | 3.8 |
| KA#: | 215005 A4.06 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|--|--|--------------------------|
| Comments: | General Data | | | |
| | Level | | RO | |
| | Tier | | 2 | |
| | Group | | 1 | |
| | KA # and Rating | | 215005 A4.06 3.6/3.8 | |
| | KA Statement | | Average Power Range Monitor/Local Power Range Monitor System Ability to manually operate and/or monitor in the control room: Verification of proper functioning/ operability | |
| | Cognitive level | | lower | |
| | Safety Function | | 7 | |
| | 10 CFR 55 | | 41.7 | |
| | Technical Reference with Revision No: | | M-0043 sht 2 | Rev #: 4 0 |
| | Justification for Non SRO CFR Link: | | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | | new | |
| | Question Source: (i.e. New, Bank, Modified) | | new | |
| | Low KA Justification (if required): | | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | new | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | | none | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

20

ID: 1455452

Points: 1.00

Unit 1 is in OPCIION 1 with the following conditions:

- 1B SLC pump is deenergized and blocked for repair
- Division II D.C. has experienced a fault and is deenergized
- A feedwater transient caused reactor water level to drop to +5 inches before being restored to +35 inches
- All RO SCRAM actions have been completed per OT-200 attachment # 1
- Reactor power remains at 100%

WHICH ONE of the following identifies the status of RWCU System isolation valves 3 minutes later?

INBOARD ISOLATION VALVE
HV-44-1F001

OUTBOARD ISOLATION VALVE
HV-44-1F004

- | | | |
|----|--------|--------|
| A. | Open | Open |
| B. | Closed | Closed |
| C. | Open | Closed |
| D. | Closed | Open |

Answer: D

Answer Explanation

- A Incorrect plausible to the examinee who recalls that without Div II DC that Div II RRCS is INOP but incorrectly believes that both divisions of RRCS are required to close either RWCU isolation valve.
- B Incorrect plausible to the examinee who who does not recall that Div I RRCS uses B SBLC pp logic to close the HV-44-1F004
- C Incorrect plausible to the examine who reverse Div I and Div II RRCS actions
- D Correct although DIV 1 RRCS normally closes both RWCU isol valves it does so through the SLC pump logic. with the B SLC pump deenergized the outboard valve will not close. The distractors are plausible to the examinee who does not properly recall how SLC in conjunction with RRCS work to isolate RWCU.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 20 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|--------------|--|--|-------|----|--|------|---|--|-------|---|--|-----------------|----------------------|--|--------------|---|--|-----------------|--------|--|-----------------|---|--|-----------|------|--|---------------------------------------|--|--------|-------------------------------------|-----|--|--|-----|--|---|-----|--|-------------------------------------|-----|--|---|-----|--|-----|--|--|--|------|--|------|--|--|----------------------------|--|--|---|--|--|----------|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455452 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 20 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS0048.08A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SLC RWCU isolation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 211000 A4.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="3">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="2">RO</td> </tr> <tr> <td>Tier</td> <td colspan="2">2</td> </tr> <tr> <td>Group</td> <td colspan="2">1</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="2">211000 A4.06 3.9/3.9</td> </tr> <tr> <td>KA Statement</td> <td colspan="2">Standby Liquid Control System Ability to manually operate and/or monitor in the control room: RWCU system isolation</td> </tr> <tr> <td>Cognitive level</td> <td colspan="2">higher</td> </tr> <tr> <td>Safety Function</td> <td colspan="2">1</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="2">41.7</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td></td> <td>Rev #:</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="2">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="2">new</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="2">new</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="2">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="2">new</td> </tr> <tr> <th colspan="3">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="2">none</td> </tr> <tr> <th colspan="3">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="2"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="2"></td> </tr> <tr> <td>Comments</td> <td colspan="2"></td> </tr> </tbody> </table> | | General Data | | | Level | RO | | Tier | 2 | | Group | 1 | | KA # and Rating | 211000 A4.06 3.9/3.9 | | KA Statement | Standby Liquid Control System Ability to manually operate and/or monitor in the control room: RWCU system isolation | | Cognitive level | higher | | Safety Function | 1 | | 10 CFR 55 | 41.7 | | Technical Reference with Revision No: | | Rev #: | Justification for Non SRO CFR Link: | n/a | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | Question Source: (i.e. New, Bank, Modified) | new | | Low KA Justification (if required): | n/a | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | ILT | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | LORT | | | PRA: (i.e. Yes or No or #) | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | Comments | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 211000 A4.06 3.9/3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Standby Liquid Control System Ability to manually operate and/or monitor in the control room: RWCU system isolation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | | Rev #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

21

ID: 1455676

Points: 1.00

Plant conditions are as follows;

- Unit 1 is at 50% power, shutting down due to a fuel failure.
- Unit 2 is in OPCON 5 with refueling activities in progress with secondary containment set on the refuel floor.
- An unisolable steam leak develops in the UNIT 1 reactor enclosure.
- Unit 1 reactor enclosure radiation levels rise to 2.3 mR/hr

Regarding the reactor enclosure and the refuel floor, which of the following describes the Zones SBTG will maintain at a negative pressure and the reason for the initiation of SBTG?

| | Zones SBTG will maintain negative | Reason for SBTG initiation |
|----|---|---|
| A. | Unit 1 reactor enclosure ONLY | Limit iodine and particulate concentration in gases, prior to discharge |
| B. | Unit 1 reactor enclosure ONLY | Limit particulate concentration in gases ONLY, prior to discharge |
| C. | Unit 1 reactor enclosure and Refuel floor | Limit iodine and particulate concentration in gases, prior to discharge |
| D. | Unit 1 reactor enclosure and Refuel floor | Limit particulate concentration in gases ONLY, prior to discharge |

Answer: A

Answer Explanation

- A Correct Reactor HVAC isolates at 1.35 mr/h. although refuel floor containment is set, only when Zones are crosstied will a reactor HVAC isolation also isolate the refuel floor. The purpose of the SBTG filters per the Design basis document L-S-32 is The SGTS/RERS filters iodine and particulate concentrations in gases potentially present within the Secondary Containment prior to discharge to the environment via the North Stack.
- B Incorrect Limit particulate only is incorrect but plausible to the examinee who does not recall the purpose of the charcoal filters
- C incorrect plausible to the examinee who recognizes that the radiation levels are above the refuel floor setpoint, but either does not recall the crosstie logic or believe that hi reactor radiation will isolate the refuel floor as long as the zone is established
- D incorrect plausible to the examinee who recognizes that the radiation levels are above the refuel floor setpoint, but either does not recall the crosstie logic or believe that hi reactor radiation will isolate the refuel floor as long as the zone is established and does not recall the purpose of the charcoal filters

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 21 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|-------------|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|---|--|--|-----------------|-----------------------|--|--|--------------|---|--|--|-----------------|--------|--|--|-----------------|---|--|--|-----------|------|--|--|---------------------------------------|------------|--------|-------------|-------------------------------------|-----|--|--|--|-----|--|--|---|-----|--|--|-------------------------------------|-----|--|--|---|-----|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455676 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 21 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LOT0200.01C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SBGT initiation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 261000 2.1.27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 261000 2.1.27 3.9/4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Standby Gas Treatment System Knowledge of system purpose and/or function. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | DBD L-S-32 | Rev #: | 0 0 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

22

ID: 1649592

Points: 1.00

Unit 1 is operating at 100% power when emergent maintenance on the SLC tank Main Control Room level indication is required.

The level indication is taken out of service for maintenance by isolating and venting the air.

WHICH ONE of the following describes the SLC alarm that will be received and the availability of the SLC pumps in the above configuration?

| | <u>ALARM</u> | <u>SLC Pump Availability</u> |
|----|--------------|------------------------------|
| A. | High level | available |
| B. | Low level | NOT available |
| C. | High level | NOT available |
| D. | Low level | available |

Answer: D

Answer Explanation

To answer the question the candidate must understand the operation of the SLC tank bubbler and how the bubbler will fail when air is removed. With air removed from the bubbler, level indication will fail low. Also the candidate must know that the bubbler is for indication only and has no effect on the the operation of the SLC pumps and SLC system operability.

Higher back pressure equals higher tank level. with air isolated to the bubbler tank level indication in the MCR will read 0

A Incorrect level will indicate lower

B incorrect the pumps trip on low tank level but not from the MCR indication that uses a bubbler air system for indication

C Incorrect With air removed from the bubbler, level indication will fail low. the pumps trip on low tank level but not from the MCR indication that uses a bubbler air system for indication

D Correct

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 22 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 6 |
| Difficulty: | 2.00 |
| System ID: | 1649592 |
| User-Defined ID: | Q# 22 NEW |
| Lesson Plan Objective: | LLOR1102E |
| Topic: | SLC operability |
| RO: | 3.1 |
| SRO: | 4.2 |
| KA#: | 211000 2.2.36 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|---|---|--|--------|----|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 1 | | |
| | KA # and Rating | 211000 2.2.36 3.1/4.2 | | |
| | KA Statement | Standby Liquid Control System Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations. | | |
| | Cognitive level | low | | |
| | Safety Function | 1 | | |
| | 10 CFR 55 | 41.10 | | |
| | Technical Reference with Revision No: | S48.1.A | Rev #: | 22 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 906982 modified | | |
| | Question Source: (i.e. New, Bank, Modified) | bank | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| PRA: (i.e. Yes or No or #) | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | 211000 A1.10 | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

23

ID: 1601488

Points: 1.00

Unit 1 is in OPCON 3 with the following

- Reactor pressure is 500 psi
- Drywell purge is in progress with the 0A Drywell Purge fan through the 0A SBGT filter
- Maintenance has entered the drywell

Which of the following describes the maximum allowable suppression pool to drywell differential pressure and what is the basis for this requirement?

| | <u>Differential pressure</u> | <u>Basis for this limit</u> |
|----|------------------------------|---|
| A. | 0.5 PSID | To prevent suppression pool nitrogen from entering the drywell |
| B. | 0.5 PSID | To prevent exceeding the maximum drywell floor differential design pressure |
| C. | 5.0 PSID | To prevent suppression pool nitrogen from entering the drywell |
| D. | 5.0 PSID | To prevent exceeding the maximum drywell floor differential design pressure |

Answer: A

Answer Explanation

- A Correct per warning in S57.5.B The Primary Containment Vacuum Relief Valves are designed to lift at 0.5 psid to relieve Suppression Pool pressure to the Drywell. For personnel access to the Drywell, with the Suppression Pool inerted with N2, Suppression Pool/Drywell differential pressure must be maintained below 0.5 psid to prevent Suppression Pool inerted atmosphere from flooding the Drywell.
- B Incorrect 5.0 is the containment external to internal limit plausible to the examinee who confuses internal to external pressure with DW to supp pool.
- C Incorrect plausible to the examinee who confuses internal to external pressure with DW to supp pool. bases
- D Incorrect 5.0 is the containment external to internal limit

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 23 Info | |
|--------------------------|----------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1601488 |
| User-Defined ID: | Q# 23 NEW |
| Lesson Plan Objective: | LOT0060.4D |
| Topic: | purge containment DP |
| RO: | 2.9 |
| SRO: | 3.2 |
| KA#: | 261000 A4.05 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|--|--------|--------|
| Level | RO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 261000 A4.05 2.9/3.2 | | |
| KA Statement | Standby Gas Treatment System Ability to manually operate and/or monitor in the control room: Drywell to suppression chamber/torus differential pressure: Mark-I,II | | |
| Cognitive level | lower | | |
| Safety Function | 9 | | |
| 10 CFR 55 | 41.7,41.10 | | |
| Technical Reference with Revision No: | S57.5.B | Rev #: | 2 7 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| Question Source: (i.e. New, Bank, Modified) | new | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

24

ID: 1455288

Points: 1.00

Plant conditions are as follows;

- Control enclosure HVAC is in service with the A Safeguard Battery room exhaust fan 0AV124 in service
- Unit 1 Safeguard Battery room exhaust fan supply damper HD-78-90B has failed closed

Which of the following describes the plant response and the reason for this response?

| | PLANT RESPONSE | REASON FOR THIS RESPONSE |
|----|--|-----------------------------------|
| A. | B Safeguard Battery room exhaust fan 0BV124 Starts | Maintain battery room temperature |
| B. | B Safeguard Battery room exhaust fan 0BV124 Starts | Reduce Hydrogen buildup |
| C. | Connecting damper HD-78-092B Unit 1 battery room to Emergency Switchgear and Battery Room Supply Air will open | Maintain battery room temperature |
| D. | Connecting damper HD-78-092B Unit 1 battery room to Emergency Switchgear and Battery Room Supply Air will open | Reduce Hydrogen buildup |

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Lesson plan LGSOPS0078

- if both battery exhaust fans trip, or any of the battery exhaust fan inlet dampers are less than full open, dampers will open connecting the battery room exhaust duct to the emergency switchgear and battery room supply fan suction. This ensures hydrogen does not accumulate in the battery rooms.

UFSAR 9.5-13

The exhaust ducts from the Class 1E battery rooms are provided with safety-grade isolation dampers in both branches of duct-work leading to the battery room exhaust fans and to the emergency switchgear and battery room supply air fan cabinets. The dampers in the duct-work leading to the exhaust fans are provided with safety-related position switches which activate the dampers in the duct-work leading to the supply air fan cabinets. In the event of closure of any of the dampers leading to the exhaust fans, the dampers in the duct-work from the battery rooms of the affected reactor unit and leading to the air supply fan cabinets will automatically open, thereby establishing recirculation air flow through the affected battery rooms. This re-establishment prevents accumulation of hydrogen above safe limits.

A is incorrect plausible to the examinee who does not recall that all battery rooms tie into a common header there by thinking an A/C damper closure would start the B fan. also the examinee does not recall the bases for recirculation.

B is incorrect plausible to the examinee who does not recall that all battery rooms tie into a common header there by thinking an A/C damper closure would start the B fan.

C Incorrect plausible to the examinee who does not recall the bases for recirculation.

D correct for the reasons stated above.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 24 Info | |
|--------------------------|--------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455288 |
| User-Defined ID: | Q# 24 NEW |
| Lesson Plan Objective: | LGSOPS0078.1C |
| Topic: | Battery H2 buildup |
| RO: | 2.6 |
| SRO: | 2.9 |
| KA#: | 263000 K5.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|--------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 1 | | |
| | KA # and Rating | 263000 K5.01 2.6/2.9 | | |
| | KA Statement | D.C. Electrical Distribution Knowledge of the operational implications of the following concepts as they apply to D.C. ELECTRICAL DISTRIBUTION : Hydrogen generation during battery charging | | |
| | Cognitive level | lower | | |
| | Safety Function | 6 | | |
| | 10 CFR 55 | 41.5 | | |
| | Technical Reference with Revision No: | M-078 sht 4 | Rev #: | 2 2 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | IL-1 | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

25

ID: 1455268

Points: 1.00

Unit 1 plant conditions are as follows:

- HPCI is in service for RPV pressure control (CST to CST)
- FIC-055-1R600 "HPCI FLOW CONTROL VALVE AUTO/MAN switch" is in AUTO
- HV-55-1F008 "HPCI, Test Loop Shutoff" is throttled to maintain pump discharge pressure 150 psig over Reactor pressure.
- The RO throttles HV-55-1F008 in the closed direction for one second

WHICH ONE of the following describes HPCI turbine speed and flow rate five minutes later, as compared to conditions prior to throttling HV-55-1F008?

| | <u>HPCI Turbine Speed</u> | <u>Flow rate</u> |
|----|---------------------------|------------------|
| A. | No change | Higher |
| B. | Higher | No change |
| C. | Lower | No change |
| D. | No change | Lower |

Answer: B

Answer Explanation

B Correct: Higher/ No change: With Flow Controller in AUTO, system flow is maintained constant. IF F008 is throttled closed HPCI speed will need to increase to maintain the same flow

A Incorrect: No change/Higher: plausible to the examinee who believe speed is maintained constant and that flow will increase with a higher DP across the valve

C Incorrect: Lower/No change: plausible to the examinee who believe throttling the 1F008 will lower pump speed

D Incorrect: No Change/Lower: Flow Controller is in Auto, maintaining system flow constant. plausible to the examinee who believes AUTO maintains speed constant

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 25 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.50 |
| System ID: | 1455268 |
| User-Defined ID: | Q# 25 BANK |
| Lesson Plan Objective: | LOT-340.12 HPCI |
| Topic: | Unit 1 plant conditions are as follows: <input type="checkbox"/> HPCI is in service for RPV pressure control (CST to CST) <input type="checkbox"/> |
| RO: | 3.8 |
| SRO: | 3.7 |
| KA#: | 206000 A1.06 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|--|--------|-----|
| Level | RO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 206000 A1.06 3.8/3.7 | | |
| KA Statement | High Pressure Coolant Injection System Ability to predict and/or monitor changes in parameters associated with operating the HIGH PRESSURE COOLANT INJECTION SYSTEM controls including: System flow: BWR-2,3,4 | | |
| Cognitive level | higher | | |
| Safety Function | 2 | | |
| 10 CFR 55 | 41.5 | | |
| Technical Reference with Revision No: | S55.1.D, note Step 4.4.3 | Rev #: | 4 4 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 591110 | | |
| Question Source: (i.e. New, Bank, Modified) | Bank | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

26

ID: 1455689

Points: 1.00

Unit 2 is operating normally at 80% power when a LOCA occurs.

- A LOCA signal is generated for all four divisions of ECCS

WHICH ONE of the following describes the RHR pump starting sequence?

- A. All Unit 2 RHR pumps will start immediately
- B. All Unit 2 RHR pumps will start after a 7 second time delay
- C. "2A" and "2B" RHR pumps start immediately, "2C" and "2D" RHR pumps start after a 5 second time delay
- D. "2C" and "2D" RHR pumps start immediately, "2A" and "2B" RHR pumps start after a 5 second time delay

Answer: D

Answer Explanation

The RHR pumps start on a LOCA signal

a) With offsite power pumps C&D start immediately and A&B start 5 seconds later.

b) Without off-site power each pump starts when the associated diesel output breaker shuts.

A Incorrect, plausible to the examinee who confuses sequence with RHR pump start on a loss of offsite power

B Incorrect, plausible to the examinee who confuses sequence with Core Spray initiation on a loss of off site power

C Incorrect plausible to the examinee who reverses the dedicated LPCI pp

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 26 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 5 |
| Difficulty: | 2.00 |
| System ID: | 1455689 |
| User-Defined ID: | Q# 26 BANK |
| Lesson Plan Objective: | LOT0051.07 |
| Topic: | offsite power is available - RPV pressure is 360 psig - drywell pressure reaches 1.68 psig describ |
| RO: | 4.0 |
| SRO: | 3.9 |
| KA#: | 203000 A3.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------|---|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 1 | |
| | KA # and Rating | 203000 A3.02 4.0/3.9 | |
| | KA Statement | RHR/LPCI: Injection Mode (Plant Specific) Ability to monitor automatic operations of the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) including: Pump start | |
| | Cognitive level | lower | |
| | Safety Function | 2 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | E11-1040 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 554543 | |
| | Question Source: (i.e. New, Bank, Modified) | bank 554543 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 554543 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| | Comments | | |
| | <p>Lesson Plan: LOR-9305-B, Obj. 2 LLOR0101C, Obj. 4</p> <p>K/A Catalog: 203000 K4.01 4.2/4.2</p> <p>JTA 2030020101</p> | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

27

ID: 1478356

Points: 1.00

Unit 1 is operating at 100% power with the following:

- 1D01 TURBINE ENCLOSURE 250V DC MOTOR CONTROL CENTER (10-D125) has been deenergized for 2 hours

A malfunction on the main turbine lube oil system results in the following:

- Main Shaft Oil Pump (MSOP) discharge pressure of 150 psig
- Turning gear oil pump (TGOP) discharge pressure of 10 psig

WHICH ONE of the following identifies the status of the Turning Gear Oil Pump (TGOP) and Emergency Bearing Oil Pump (EBOP)?

| | <u>TGOP</u> | <u>EBOP</u> |
|----|-------------|-------------|
| A. | Running | Running |
| B. | Running | Not Running |
| C. | Not Running | Not Running |
| D. | Not Running | Running |

Answer: B

Answer Explanation

EBOP is powered from non safeguard DC.

TGOP is powered from D114-G-D

TGOP Start on MSOP discharge pressure < 190 OR bearing header pressure < 15 psig

EBOP Start on MSOP discharge pressure < 180 AND TGOP discharge pressure < 12 psig

- A Incorrect plausible to examinee who believes EBOP is powered from safeguard DC
- B Correct TGOP has a start signal as does EBOP however EBOP power supply is lost
- C Incorrect plausible to the examinee who does not recall the TGOP start setpoints
- D Incorrect plausible to the examinee who reverses the power supplies for TGOP and EBOP

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 27 Info | |
|--------------------------|------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 2 |
| Difficulty: | 2.00 |
| System ID: | 1478356 |
| User-Defined ID: | Q# 27 NEW |
| Lesson Plan Objective: | LGSOPS0019.IL4 |
| Topic: | Main turb oil pp power |
| RO: | 2.7 |
| SRO: | 2.7 |
| KA#: | 245000 K1.09 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|--|--------|---|
| Level | RO | | |
| Tier | 2 | | |
| Group | 2 | | |
| KA # and Rating | 245000 K1.09 2.7/2.7 | | |
| KA Statement | Main Turbine Generator and Auxiliary Systems Knowledge of the physical connections and/or causeeffect relationships between MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS and the following: D. C . electrical distribution | | |
| Cognitive level | higher | | |
| Safety Function | 4 | | |
| 10 CFR 55 | 41.4 | | |
| Technical Reference with Revision No: | LGSOPS0019 | Rev #: | 2 |
| Justification for Non SRO CFR Link: | N/A | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| Question Source: (i.e. New, Bank, Modified) | new | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

28

ID: 1455690

Points: 1.00

Unit 1 is in OPCON 1, with the following:

- '1A' Recirc Pump removed from service due to seal failure
- '1B' Recirc Pump operating at 980 rpm with the following failed/bypassed cells on '1B' ASD:
 - Two (2) Phase 'A' cells
 - One (1) Phase 'B' cell

WHICH ONE of the following combinations of **additional** cell failures would require operators to insert a manual scram?

| | A Phase | B Phase | C Phase |
|----|---------|---------|---------|
| A. | 0 | 0 | 3 |
| B. | 0 | 2 | 1 |
| C. | 2 | 1 | 0 |
| D. | 1 | 1 | 1 |

Answer: C

Answer Explanation

See S43.1.F, Attachment 2, page 16 of 65, FRR # 2.1.2...the '1B' ASD will trip if EITHER all 4 cells fail on a given Phase, OR a total of more than 6 cells fail. Therefore, the two additional Phase 'A' cell failures will trip the '1B' ASD. With '1A' Recirc Pump already secured, a trip of '1B' will require a manual scram per OT-112, step 3.1.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 28 Info | |
|--------------------------|-----------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 4.00 |
| System ID: | 1455690 |
| User-Defined ID: | Q# 28 BANK |
| Lesson Plan Objective: | LGSOPS0043B.2C |
| Topic: | ASD Response to Cell Bypass |
| RO: | 3.2 |
| SRO: | 3.2 |
| KA#: | 202001 K2.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|---|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 2 | | |
| | KA # and Rating | 202001 K2.01 3.2/3.2 | | |
| | KA Statement | Recirculation System Knowledge of electrical power supplies to the following: Recirculation pumps: Plant-Specific | | |
| | Cognitive level | higher | | |
| | Safety Function | 1 | | |
| | 10 CFR 55 | 41.7 | | |
| | Technical Reference with Revision No: | S43.1.F | Rev #: | 3 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 966665 | | |
| | Question Source: (i.e. New, Bank, Modified) | bank 966665 | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 966665 | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-#) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

29

ID: 1535797

Points: 1.00

Unit 1 initial plant conditions are as follows:

- SAMPS are being implemented
- Reactor Level is -290" down slow with no injection
- Reactor Pressure is 1175 psig steady (no SRV pneumatics available)

RPV pressure reduction has been ordered by performing section 4.7 of T-260, "RPV Venting Through HPCI Steam Line."

During the depressurization, HPCI Pump Room pressure peaked at 3 psig.

WHICH ONE of the following correctly identifies whether the release is (a) Scrubbed and/or Filtered and (b) the release path?

| | <u>Scrubbed and/or Filtered</u> | <u>Release Path</u> |
|----|---------------------------------|--------------------------|
| A. | Yes | Monitored Elevated |
| B. | Yes | Unmonitored Ground Level |
| C. | No | Monitored Elevated |
| D. | No | Unmonitored Ground Level |

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Section 4.7 of T-260, RPV Venting Through HPCI Steam Line contains the following Cautions:

2. It is highly probable that the vent path in Section 4.7 will flood the Reactor Enclosure with nuclear steam **AND** reactor source term.

3. The flooding of the Reactor Enclosure with Nuclear Steam will cause severe Reactor Enclosure environmental conditions which could render ECCS **AND** other equipment inoperable, along with the potential of losing Reactor Enclosure electrical power.

This in addition to the Stem stating that the pump room peaking at 3 psig (well above the 5 inches of water column for the Steam Flooding Dampers and the 0.5 psig for the blowout panes) the candidate should determine that there is an unscrubbed, unfiltered ground level release.

A is plausible if the candidate mistakenly believes that steam is scrubbed through the suppression pool water or the SBGTS filters and is released through the North Stack via SBGTS.

B is plausible if the candidate mistakenly believes that the steam is scrubbed through the suppression pool prior to going out the blowout panel

C is plausible if the candidate mistakenly believes that the steam exits the plant via Reactor Enclosure HVAC out the South Stack.

D is correct The RO candidate is responsible to know that the pump room peaking at 3 psig (well above the 5 inches of water column for the Steam Flooding Dampers and the 0.5 psig for the blowout panes) the RO candidate should determine that there is an unscrubbed (venting HPCI steam line will not go through the suppression pool), unfiltered ground level release (pressurizing HPCI pump room will cause steam flooding dampers to close isolating the room from reactor HVAC as the room pressurizes blowout pannels will open causing an un filtered/ground level release.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 29 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1535797 |
| User-Defined ID: | Q# 29 BANK |
| Lesson Plan Objective: | LGSOPS0076B.9 |
| Topic: | Given plant conditions and applicable T-260 section determine unmonitored release path |
| RO: | 4.0 |
| SRO: | 4.4 |
| KA#: | 290001 K3.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|-------------------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 2 | |
| | KA # and Rating | 290001 K3.01 4.0/4.4 | |
| | KA Statement | Secondary Containment Knowledge of the effect that a loss or malfunction of the SECONDARY CONTAINMENT will have on following: †Off-site radioactive release rates | |
| | Cognitive level | higher | |
| | Safety Function | 5 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | LGSOPS0076B. | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 1247968 | |
| | Question Source: (i.e. New, Bank, Modified) | bank 1247968 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 1247968 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

30

ID: 1601388

Points: 1.00

Unit 1 plant conditions are as follows:

- Reactor power is 100%
- 30 scfm Offgas effluent flow
- Offgas dew point monitor is reading 40°F

The Charcoal Vault Refrigeration Compressors trip and cannot be restarted.

WHICH ONE of the following identifies the change in the activity of the Offgas effluent, if any and the monitoring location?

| | <u>Change in Activity</u> | <u>Monitoring Location</u> |
|----|---------------------------|----------------------------|
| A. | Rises | North Stack |
| B. | Rises | South Stack |
| C. | Remains the same | North Stack |
| D. | Remains the same | South Stack |

Answer: A

Answer Explanation

The charcoal delays gaseous xenon, krypton, and their daughter products along with biologically significant isotopes Sr-89, Sr-90, Ba-140 and Cs-137 in the Offgas stream through adsorption. This allows the radioactive isotopes to decay to levels acceptable for release to the atmosphere.

Rises, North Stack is correct. With the refrigeration system out of service, Offgas temperatures will rise which will cause flow through the charcoal guard bed to rise. The increased flow will result in higher release rates.

Rises, South Stack is incorrect. Release is through the North Stack. This distractor is plausible if the operator believes that Offgas flow is through the South Stack.

Lowens, North Stack is incorrect. Release rates will be higher. This distractor is plausible if the operator believes that Offgas flow will drop with the refrigeration machine out of service.

Lowens, South Stack is incorrect. Release rates will be higher and the release will be through the South Stack. This distractor is plausible based on the misconceptions described in the first two distractors.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 30 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 0 |
| Difficulty: | 2.50 |
| System ID: | 1601388 |
| User-Defined ID: | Q# 30 BANK |
| Lesson Plan Objective: | LOT0510.06 |
| Topic: | Given the following conditions: - Reactor power is 100% - 30 scfm Offgas effluent flow - Offgas de |
| RO: | 2.7 |
| SRO: | 2.9 |
| KA#: | 271000 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 2 | |
| | KA # and Rating | 271000 K4.06 | |
| | KA Statement | Offgas System Knowledge of OFFGAS SYSTEM design feature(s) and/or interlocks which provide for the following: Decay of fission product gases to particulate daughters | |
| | Cognitive level | higher | |
| | Safety Function | 9 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | M-0079 sheet 2 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 833329 | |
| | Question Source: (i.e. New, Bank, Modified) | bank 833329 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 833329 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

31

ID: 1601440

Points: 1.00

Unit 1 is operating at 100% power when the following occurs:

- HIGH-HIGH level condition in the '1A' Feedwater Heater (FWH)

WHICH ONE of the following describes the response of APRMs and the resultant feedwater temperature at the inlet to the reactor feed pump ? (assume no operator action)

| | <u>APRM Readings</u> | <u>Reactor feed pump inlet temperature</u> |
|----|----------------------|--|
| A. | Lower | Lower |
| B. | Lower | Higher |
| C. | Higher | Higher |
| D. | Higher | Lower |

Answer: D

Answer Explanation

Upon a high high FWH isolation on the 1A FWH, HV-005-*02 and HV-005-*01 close stopping all FW flow through the 1A low pressure string. The flow through the 1B and 1C FW String combines and is equally distributed to the 1A, 1B, and 1C Feed pumps. The FW temperature at the inlet of the RFPT is lower than normal resulting in a an overall temperature decrease at the RFP inlet reactor power will increase by approximately 1.5%

- A Incorrect plausible to the examinee who does not recall that the effect of the loss of extraction steam has a greater effect than the increase in flow through the remaining heat exchangers
- B Incorrect plausible to the examine who believe a loss of the "A" low pressure heater string will cause flow to the A RFP to lower resulting in a recirc runback and at the effect of the loss of extraction steam has a greater effect than the increase in flow through the remaining heat exchangers
- C Incorrect plausible to the examine the loss of extraction steam will override the effect of increased flow through the remaining strings and reverses the reactivity effect
- D Correct feed water temp. entering the 6th feedwater heaters is lower so feed water to the vessel temp is lower causing a power increase

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 31 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1601440 |
| User-Defined ID: | Q# 31 BANK |
| Lesson Plan Objective: | LOT-0530, OBJ. #3 |
| Topic: | A "High-High" level condition occurs in the "1A" feedwater heater (FWH) - Any automatic actions th |
| RO: | 2.7 |
| SRO: | 2.7 |
| KA#: | 256000 K5.08 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|--|-------------------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 2 | |
| | KA # and Rating | 256000 K5.08 2.7/2.7 | |
| | KA Statement | Reactor Condensate System Knowledge of the operational implications of the following concepts as they apply to REACTOR CONDENSATE SYSTEM : Heat removal (transfer) mechanisms | |
| | Cognitive level | higher | |
| | Safety Function | 2 | |
| | 10 CFR 55 | 41.5 | |
| | Technical Reference with Revision No: | | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 554691 | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 554691 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 554691 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

32

ID: 1601405

Points: 1.00

Both units are operating at 100% power

Which of the following describes if the power supply to the Motor Driven Fire Pump is safeguard power or Non-safeguard power, and if a Tech Requirements Manual (TRM) entry is required for a loss of power to the Motor Driven Fire Pump ?

| | <u>Safeguard or non-safeguard</u> | <u>TRM entry Required</u> |
|----|-----------------------------------|---------------------------|
| A. | Safeguard | No |
| B. | Safeguard | Yes |
| C. | Non-safeguard | Yes |
| D. | Non-safeguard | No |

Answer: C

Answer Explanation

Motor driven fire pump MDFP

- A Incorrect plausible to examinee who believes fire protection pump are safeguard and believes loss of 1 of 3 pumps Motor diesel and backup diesel would not require TRM entry
- B Incorrect plausible to examinee who believes fire protection pump are safeguard
- C Correct MDFP is powered for 214D (non-safeguard) and loss of 1 pump does require TRM entry (7day)
- D Incorrect plausible to examinee who believe loss of 1 of 3 pumps Motor diesel and backup diesel would not require TRM entry

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 32 Info | |
|--------------------------|---------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1601405 |
| User-Defined ID: | Q# 32 NEW |
| Lesson Plan Objective: | LGSOPS0022.7H |
| Topic: | Loss of pwr to MDFP |
| RO: | 3.1 |
| SRO: | 3.1 |
| KA#: | 286000 K6.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|----------------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 2 | |
| | KA # and Rating | 286000K6.01 3.1/3.1 | |
| | KA Statement | Fire Protection System Knowledge of the effect that a loss or malfunction of the following will have on the FIRE PROTECTION SYSTEM A.C. electrical distribution: Plant-Specific | |
| | Cognitive level | lower | |
| | Safety Function | 8 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | s22.8.H | Rev #: 3 4 |
| | Justification for Non SRO CFR Link: | N/A | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | |
| | Question Source: (i.e. New, Bank, Modified) | new | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

33

ID: 1455176

Points: 1.00

Unit 2 is operating at 100% power with the following conditions:

- Suppression pool temperature is 93 degrees
- "2B" RHR loop is operating in Suppression Pool Cooling
- "0B" RHRSW pump is providing cooling water to the "2B" RHR heat exchanger

A Division 2 LOCA signal is inadvertently generated. The PRO reopens HV-051-2F024B "SUPP POOL CLG B". No other operator actions are taken.

WHICH ONE of the following describes the change in suppression pool heat removal (if any) over the next 5 minutes and the reason for the response?

- A. Less heat removal due to 0B RHRSW pump trip
- B. Less heat removal due to 2B RHR heat exchanger being bypassed
- C. Less heat removal due to 2B RHR pump trip
- D. Heat removal rate is unchanged, system remains in service

Answer: B

Answer Explanation

With the Div 2 LOCA signal the F048 Heat Exchanger Bypass valve would get an open signal for three minutes along with the F024, test valve closing. Therefore, the heat exchanger is bypassed and Suppression Pool temperature will increase.

- A Incorrect. Less heat removal, but the RHRSW pump will not trip. Plausible to the examinee who either does not recall the RHRSW rad monitors are powered from unit 1 and RHRSW will not trip on rad monitor down scale. or does not recall that B RHRSW pump is powered from D12
- B Correct. less heat removal due to the HTX bypass valve opening
- C Incorrect. Plausible to the examinee who does not recall that the running RHR pump will not trip on a LOCA signal as the Core Spray pumps do
- D Incorrect. Plausible to the examinee who does not recall that the heat exchanger bypass valve will automatically open on a LOCA signal

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 33 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.50 |
| System ID: | 1455176 |
| User-Defined ID: | Q# 33 BANK |
| Lesson Plan Objective: | LOT0051.08 |
| Topic: | pool temp RHR in pool cooling loca occurs |
| RO: | 4.0 |
| SRO: | 4.0 |
| KA#: | 219000 A1.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|--|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 2 | |
| | KA # and Rating | 219000 A1.01 4.0/4.0 | |
| | KA Statement | RHR/LPCI: Torus/Suppression Pool Cooling Mode Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: TORUS/SUPPRESSION POOL COOLING MODE controls including: Suppression pool temperature | |
| | Cognitive level | higher | |
| | Safety Function | 5 | |
| | 10 CFR 55 | 41.5 | |
| | Technical Reference with Revision No: | | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | 562335 | |
| | Question Source: (i.e. New, Bank, Modified) | 562335 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 562335 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

34

ID: 1649532

Points: 1.00

Unit 1 is operating at 100% power.

- Control rod 30-31 SCRAMS

Which of the following describes the indications on the four rod display, and the action required (if any) to run a P-1?

| | <u>Four rod display indication</u> | <u>Action required to run a P-1</u> |
|----|------------------------------------|---------------------------------------|
| A. | Blank, Blank | Wait for rod to settle ONLY |
| B. | Blank, Blank | Isolate rod and wait for it to settle |
| C. | 0,0 | No action required |
| D. | --, -- | Isolate rod and wait for it to settle |

Answer: B

Answer Explanation

When a control rod SCRAMS it goes to the overtravel in position (beyond RPIS position switches for a 00 position

note in ON-104 page 8 states

Until a control rod settles to a known position, i.e. other than inserted to beyond 00, a P-1 **cannot** be run.

A incorrect four rod position will indicate blank, blank but rod must be isolated to settle, plausible to the examinee who thinks that it will respond as a full reactor scram does. when scram discharge volume fills the rods will settle to 00 without isolating.

B correct RPIS will show blank (no position on the four rod display) when it scrams (overtravel in) since only 1 rod scrambled the SDV will not fill and the rod will stay at over travel position. once the rod is isolated and allowed to settle at 00 a P-1 can be run

C incorrect plausible to the examinee who does not recall the RPIS reed switch allocations at 00 and past 00. If examinee believes that position will show 00 than a P-1 would be able to be run

D incorrect --,-- (a dash in each window) of the four rod display for 30-31 is what is shown when rods are between notches while stroking. this is plausible to the examinee who believes that past 0,0 is equivalent to between notches

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 34 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1649532 |
| User-Defined ID: | Q# 34 NEW |
| Lesson Plan Objective: | LGSOPS0073A.2H |
| Topic: | RPIS Overtravel |
| RO: | 3.6 |
| SRO: | 3.9 |
| KA#: | 214000 A2.03 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|--|---------------|------------------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 2 | | |
| | KA # and Rating | 214000 A2.03 3.6/3.9 | | |
| | KA Statement | RPIS Ability to (a) predict the impacts of the following on the ROD POSITION INFORMATION SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Overtravel/in-out | | |
| | Cognitive level | low | | |
| | Safety Function | 7 | | |
| | 10 CFR 55 | 41.6 | | |
| | Technical Reference with Revision No: | ON-104 LGSOPS0073B | Rev #: | 5 5 0 2 |
| | Justification for Non SRO CFR Link: | NA | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | |
| | Question Source: (i.e. New, Bank, Modified) | New | | |
| | Low KA Justification (if required): | NA | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | New | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

35

ID: 1601449

Points: 1.00

A chemical spill results in the following:

- 'A' and 'C' Toxic Gas detectors tripped
- 'A' and 'D' Control Enclosure Chlorine detectors UPSCALE

WHICH ONE of the following identifies the status of the CREFAS Fans?

- A. Both are running
- B. Neither is running
- C. Only the 'A' fan is running
- D. Only the 'B' fan is running

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer: Remains in Standby, Neither CREFAS fan running

Chlorine Monitors

The chlorine monitoring system will initiate an automatic isolation of the Control Room HVAC system if chlorine concentration exceeds 0.40 ppm in the Control Room HVAC intake plenum. There are four chlorine detectors, which provide input to four chlorine isolation channels, as follows: (If the A and D chlorine detectors sense high chlorine, but not the B and C = No isolation)

The A and C or B and D detectors must sense high chlorine to cause an isolation signal. If the A and C chlorine detectors sense greater than 0.40 ppm chlorine, then both the A and C chlorine isolation channels will trip. If the B and D chlorine detectors sense greater than 0.40 ppm chlorine, then both the B and D chlorine isolation channels will trip.

If a chlorine isolation signal is generated on all four isolation channels, then a complete isolation will occur, which results in the following: The main Control Room air is recirculated using the normal supply and return fans, while the CREFAS fan draws some of the recirculating air through the CREFAS filter, then sends it back to the suction of the normal supply fans. (Since no outside air is drawn in, MCR \square P will decay to 0 psid.)

A chlorine isolation is accomplished as follows: The A or B CREFAS fan will start after a 30 second time delay. (Whichever fan is in AUTO will start.) The A CREFAS fan is started only by the C isolation channel, and the B CREFAS fan is started only by the D isolation channel (B & D detectors).

Toxic Gas

The toxic gas monitors provide indication and alarm in the event of toxic gas enters the Control Enclosure. Three analyzers located in the Control Enclosure are used to detect gases that are proven to be toxic, and initiate a MCR alarm once triggered. There are no automatic functions or interlocks associated with the toxic gas monitors.

Distractors:

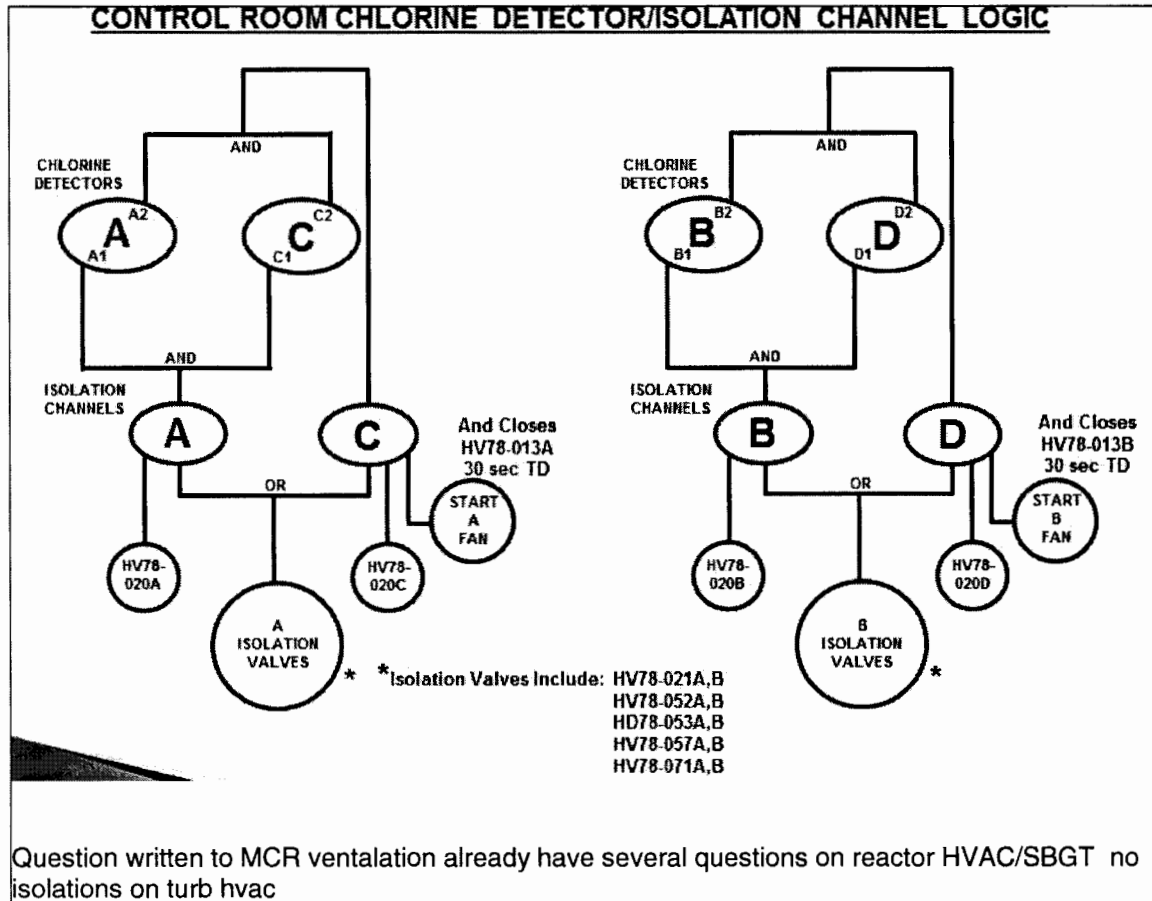
Automatically initiates "A" CREFAS only, with the "A" CREFAS running – see explanation

Automatically initiates "B" CREFAS only, with the "B" CREFAS running – see explanation

Automatically initiates both "A" & "B" CREFAS, with both CREFAS fans running – see explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO



EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 35 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1601449 |
| User-Defined ID: | Q# 35 BANK |
| Lesson Plan Objective: | LGSOPS0078.3H |
| Topic: | Describe CREFAS operation with a A MCR Radiation Isolation auto initiation |
| RO: | 3.8 |
| SRO: | 3.8 |
| KA#: | 288000 A3.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|---|--|---|-------------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 2 | |
| | KA # and Rating | 288000 A3.01 3.8/3.8 | |
| | KA Statement | Plant Ventilation Systems Ability to monitor automatic operations of the PLANT VENTILATION SYSTEMS including: Isolation/initiation signals | |
| | Cognitive level | higher | |
| | Safety Function | 9 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 560587 | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 560587 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 560587 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e., A-Systems or B-Procedures) | | |
| Comments | | | |
| <p>On a MCR Rad Isolation, the CREFAS Fan that is in AUTO will start (only 1 fan is in AUTO in a normal alignment) and the outside air dampers to the CREFAS Filters will open.</p> | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

36

ID: 1455868

Points: 1.00

Unit 1 was operating at 100% power when the following occurred.

- The 1M SRV spuriously opened several minutes ago.
- The PRO observes the following indications and diagnoses a tailpipe leak.
- Suppression pool level is 22.5 feet



Which of the following describes where the 1M SRV tailpipe leak is located and the allowed action that will mitigate the containment pressure rise?

| | <u>Location of tailpipe leak</u> | <u>Allowed action that will mitigate the condition</u> |
|----|----------------------------------|--|
| A. | Suppression Pool | Spray the Drywell |
| B. | Suppression Pool | Spray the Suppression Pool |
| C. | Drywell | Spray the Suppression Pool |
| D. | Drywell | Spray the Drywell |

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Examinee must recognize / recall that TR-157-122 Drywell reading is on top, but on PR-57-101 Suppression Pool is on top. Given that pool pressure is > drywell the leak must be in the suppression pool air space. There are 2 ways to reach drywell spray in T-102, from containment pressure leg and from drywell temperature leg. Drywell temperature leg DWT-4 stop sign when DW temp cannot be maintained <145 degrees continue. From the containment pressure leg drywell spray is not authorized until pool pressure is > 7.5 psig

- A Incorrect spraying the DW is not allowed nor would it be the most efficient way to deal with the leak plausible to the examinee who believe that since the air volume of the DW is larger than that of the pool spraying the DW will be more effective and does not recall the limits for DW spray or thinks DW is at 215 degrees.
- B Correct pool pressure is > than DW pressure so the leak is in the pool and the downcomer vacuum breakers have opened causing DW pressure to rise. Spraying the pool is directed before pool pressure reaches 7.5 psig, pool spray is allowed and the most effective way to mitigate the pressure rise.
- C Incorrect leak is in the pool plausible to the examinee who does not recall which reading is dw and which is pool
- D Incorrect spraying the DW is not allowed nor would it be the most efficient way to deal with the leak plausible to the examinee who believe that since the air volume of the DW is larger than that of the pool spraying the DW will be more effective and does not recall the limits for DW spray or thinks DW is at 215 degrees.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 36 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 4.00 |
| System ID: | 1455868 |
| User-Defined ID: | Q# 36 NEW |
| Lesson Plan Objective: | LGSOPS1560.05 |
| Topic: | pool spray |
| RO: | 4.0 |
| SRO: | 3.9 |
| KA#: | 230000 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|--|--|--|-------------------|--------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 2 | | |
| | KA # and Rating | 230000 A4.13 4.0/3.9 | | |
| | KA Statement | RHR/LPCI: Torus/Suppression Pool Spray Mode Ability to manually operate and/or monitor in the control room: Suppression chamber pressure | | |
| | Cognitive level | high | | |
| | Safety Function | 5 | | |
| | 10 CFR 55 | 41.7 | | |
| | Technical Reference with Revision No: | T-102 | Rev #: | 2 5 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| PRA: (i.e. Yes or No or #) | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

37

ID: 1455770

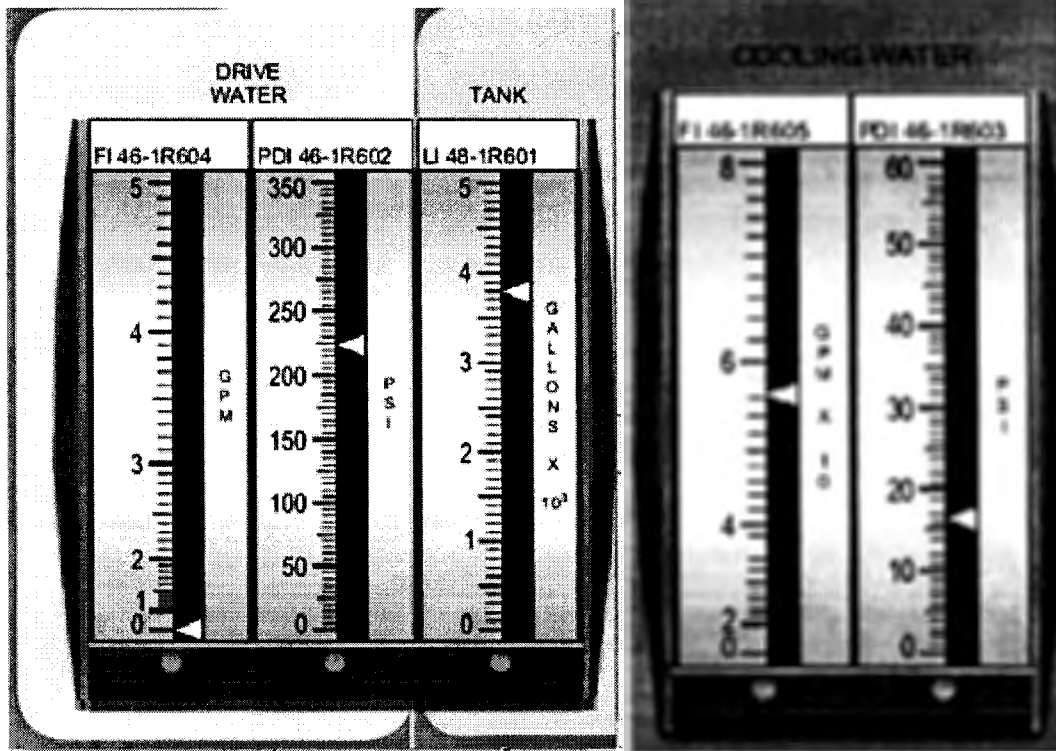
Points: 1.00

Unit 1 is at 75% reactor power.

Operators are preparing to continue raising power by control rod withdrawal

Operators are performing S73.1.A NORMAL OPERATION OF THE REACTOR MANUAL CONTROL SYSTEM

Given the following indications;



Which of the following lists both the direction to manipulate the Drive Water Pressure Control Valve HV-46-1F003 and the resulting pressure indication to be obtained, prior to withdrawing control rods?

Direction to manipulate Drive Water Pressure Control Valve HV-46-1F003

Indication to obtain

- | | |
|----------|----------------------------------|
| A. Close | PDI-46-1R602 between 255-265 PSI |
| B. Open | PDI-46-1R602 between 255-265 PSI |
| C. Close | PDI-46-1R603 between 25-35 PSI |
| D. Open | PDI-46-1R603 between 25-35 PSI |

Answer: A

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

- A Correct per S46.1.a normal operating pressure for CRD drive water is 255-265 psi. closing pressure control valve will raise drive water pressure
- B Incorrect opening pressure control valve will reduce pressure, plausible to the examinee who incorrectly recalls which side of the pressure regulating valve the indicator is on and does not take into account that the flow control valve will auto open as the pressure control valve is closed
- C Incorrect cooling water DP is within its normal band of 10 to 25 psi. adjusting pressure control valve HV-46-1F003 will have minimal affect on the down stream side of the valve because the flow control valve will be in auto and will open or close to maintain system flow. plausible to the examinee who does not recall normal value for PDI-46-1R603 or how the flow controller in automatic will affect system pressure
- D Incorrect cooling water DP is within its normal band of 10 to 25 psi. adjusting pressure control valve HV-46-1F003 will have minimal affect on the down stream side of the valve because the flow control valve will be in auto and will open or close to maintain system flow. plausible to the examinee who does not recall normal value for PDI-46-1R603 or how the flow controller in automatic will affect system pressure

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 37 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 5 |
| Difficulty: | 3.50 |
| System ID: | 1455770 |
| User-Defined ID: | Q# 37 NEW |
| Lesson Plan Objective: | LGSOPS0046.2A |
| Topic: | drive water DP |
| RO: | 4.2 |
| SRO: | 4.4 |
| KA#: | 201001 2.2.44 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|------------------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 2 | | |
| | Group | 2 | | |
| | KA # and Rating | 201001 2.2.44 4.2/4.4 | | |
| | KA Statement | Control Rod Drive Hydraulic System Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions. | | |
| | Cognitive level | higher | | |
| | Safety Function | 1 | | |
| | 10 CFR 55 | 41.5 | | |
| | Technical Reference with Revision No: | M-0046 sht1 S46.1.A | Rev #: | 5 1 3 1 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

38

ID: 1455177

Points: 1.00

WHICH ONE of the following identifies the required POST-LOCA Drywell ventilation fans and what the operation of these fans will ensure?

- | | <u>FANS</u> | <u>Operation Ensures</u> |
|----|-------------|--|
| A. | A,B,C,D | A valid Drywell temperature indication |
| B. | A,B,G,H | A valid Drywell temperature indication |
| C. | A,B,C,D | Prevent areas of high H2 and O2 concentrations in the DW |
| D. | A,B,G,H | Prevent areas of high H2 and O2 concentrations in the DW |

Answer: D

Answer Explanation

T.S 3.6.6.2 lists 1AV212,1BV212,1GV212,1HV212 as the subset of drywell coolers that are the H2 mixing coolers. They discharge to the higher elevations to prevent localized accumulation of H2 and O2 from exceeding the lower flammability limits during LOCA conditions. Incorrect answers either have incorrect fans or valid temperature. selecting incorrect fans is plausible to if examinee fails to memorize correct fans. Valid temperature is plausible to examinee who believe the cooling function of the higher elevations is the bases for requiring these fans

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 38 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455177 |
| User-Defined ID: | Q# 38 BANK |
| Lesson Plan Objective: | LGSOPS0077.3 |
| Topic: | Post-LOCA DW Vent Fans And Design Function Of These Fans |
| RO: | 3.5 |
| SRO: | 3.8 |
| KA#: | 223001 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|--|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 2 | |
| | Group | 2 | |
| | KA # and Rating | 223001 K4.04 3.5/3.8 | |
| | KA Statement | Primary Containment System and Auxiliaries Knowledge of PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES design feature(s) and/or interlocks which provide for the following: Prevents hydrogen from reaching an explosive mixture | |
| | Cognitive level | lower | |
| | Safety Function | 5 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | T.S 3.6.6.2 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 557056 | |
| | Question Source: (i.e. New, Bank, Modified) | bank 557056 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 557056 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |
| Reference: T.S. Bases 3/4.6.6 557056 K/A: 223001 K4.04, SG.07, K6.04 Used as SRO ONLY for ILT Proc Final - Good for RO Use | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

39

ID: 1454413

Points: 1.00

Unit 2 plant conditions:

- OPCON 4
- Preparations are being made to flood the main steam lines per GP-6.1, 'Shutdown Operations'
- RPV level is +90"
- All appropriate steps in GP-6.1 have been performed

HV-051-2F008 Shutdown Cooling outboard supply receives an inadvertent isolation signal and cannot be reopened

WHICH of the following is the MINIMUM reactor level that will ensure adequate core circulation exists, per GP-6.1?

- A. Upset Range level indicates +61"
- B. Shutdown Range level indicates +79"
- C. Shutdown Range level indicates + 61"
- D. Wide Range level indicates +61"

Answer: C

Answer Explanation

Shutdown Range level indicates +61 inches is correct: Per caution in GP-6.1, RPV level must be maintained greater than 60 inches on Shutdown Range or greater than 78 inches on Upset Range for sufficient natural circulation in the event of a loss of forced circulation.

Upset level indication at 61 inches is incorrect: Does not meet the minimum RPV level of 78 inches in GP-6.1.

Wide Range level indication at 61 inches is incorrect: Wide Range level is not referenced in GP-6.1.

Shutdown range +79 is incorrect not the minimum required level.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 39 Info | |
|--------------------------|------------------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 2.00 |
| System ID: | 1454413 |
| User-Defined ID: | Q# 39 MODIFIED |
| Lesson Plan Objective: | LOT0051.11 RHR |
| Topic: | Natural Circ following loss of SDC |
| RO: | 3.5 |
| SRO: | 3.6 |
| KA#: | 295001.AK1.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|--|--------|----|
| Level | RO | | |
| Tier | 1 | | |
| Group | 1 | | |
| KA # and Rating | 295001 AK1.01 3.5/3.6 | | |
| KA Statement | Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION :Natural circulation | | |
| Cognitive level | lower | | |
| Safety Function | 1&4 | | |
| 10 CFR 55 | 41.9 & 41.10 | | |
| Technical Reference with Revision No: | GP-6.1 | Rev #: | 32 |
| Justification for Non SRO CFR Link: | NA | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 710695 | | |
| Question Source: (i.e. New, Bank, Modified) | bank Modified | | |
| Low KA Justification (if required): | na | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

40

ID: 1433148

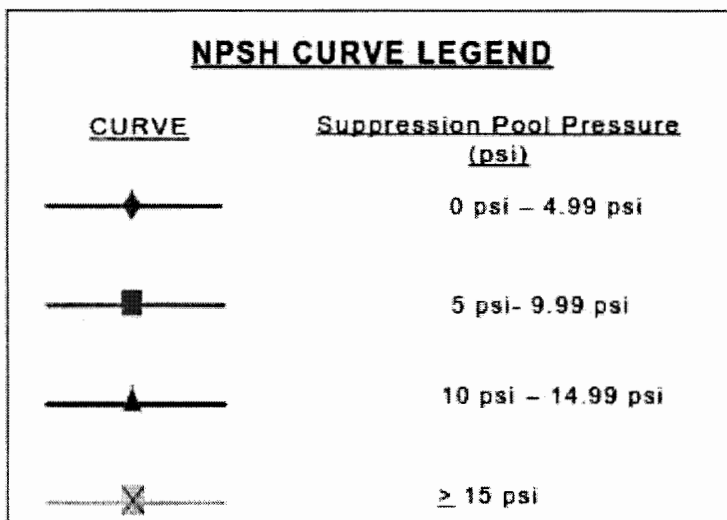
Points: 1.00

Plant conditions are as follows:

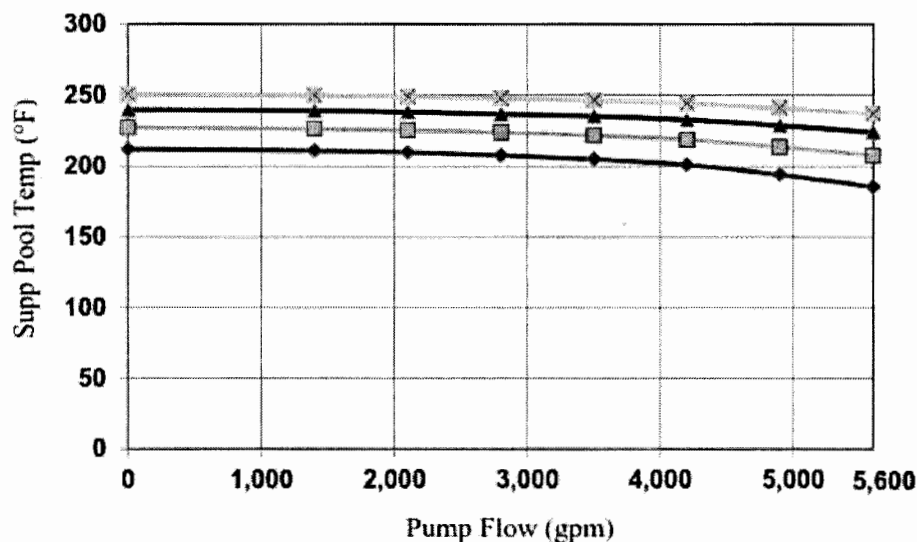
- Suppression Pool temperature is 200° F
- Drywell pressure is 8.0 psig
- Suppression Pool pressure is 3.0 psig
- CST level is 1 foot

Given the following graphs;

Which of the following lists the system(s), and flow rates if any, that are able to inject without violating NPSH limits?



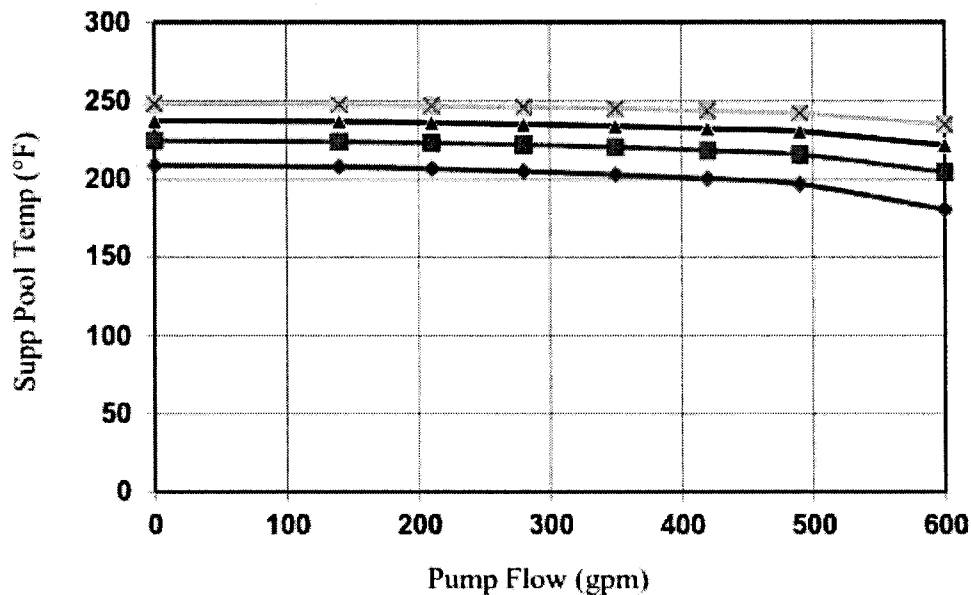
HPCI NPSH LIMIT



EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

RCIC NPSH LIMIT



- A. BOTH HPCI at 3500 GPM AND RCIC at 500 GPM
- B. NEITHER HPCI at 3500 GPM OR RCIC at 500 GPM
- C. RCIC at 500 GPM but NOT HPCI at 3500 gpm
- D. HPCI at 3500 GPM but NOT RCIC at 500 gpm

Answer: D

Answer Explanation

- A Incorrect plausible to the examinee who uses drywell pressure
- B Incorrect plausible to the examinee who cannot determine safe side of NPSH graph and who uses drywell pressure not pool pressure
- C Incorrect plausible to the examinee who uses drywell pressure for the RCIC graph or cannot determine safe side of graph
- D Correct only HPCI at 3500 is on the safe side of graph

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 40 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 3.00 |
| System ID: | 1433148 |
| User-Defined ID: | Q# 40 NEW |
| Lesson Plan Objective: | LOT0340.14F |
| Topic: | NPSH |
| RO: | 3.0 |
| SRO: | 3.4 |
| KA#: | 295026 EK1.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|-----------|--|
| Level | RO | | |
| Tier | 1 | | |
| Group | 1 | | |
| KA # and Rating | 295026 EK1.01 3.0/3.4 | | |
| KA Statement | Suppression Pool High Water Temperature Knowledge of the operational implications of the following concepts as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE :Pump NPSH | | |
| Cognitive level | higher | | |
| Safety Function | 5 | | |
| 10 CFR 55 | 41.8,41.9,41.10 | | |
| Technical Reference with Revision No: | T-102 | Rev #: 25 | |
| Justification for Non SRO CFR Link: | N/A | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | |
| Question Source: (i.e. New, Bank, Modified) | New | | |
| Low KA Justification (if required): | N/A | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | N/A | | |
| ILT | | | |
| Supplied Ref (if appropriate): (i.e. ABN-##) | None | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

41

ID: 1650585

Points: 1.00

Unit 1 plant conditions are as follows:

- Unit has been shutdown due to major fuel damage
- An off-site release is in progress

WHICH ONE of the following annunciators indicate that a release is in progress that will result in the exposure of a member of the public in an Unrestricted Area exceeding limits?

- A. 003 RAD E-1, NORTH STACK HI-HI RADIATION
- B. 107 REACTOR I-1, MAIN STEAM LINE HIGH-HIGH RADIATION
- C. 003 RAD F-2, UNIT 1 & 2 SOUTH STACK HI RADIATION
- D. 109 RAD E-1, 1 REAC ENCL REFUEL FLR VENT EXHAUST RAD MON A/B HI-HI / DOWNSCALE

Answer: A

Answer Explanation

HI-HI alarms indicate that the site is releasing in excess of ODCM limits and a member of the general public standing in an Unrestricted Area (at site boundary) would exceed legal limit (10CFR20)

003 RAD E-1 North Stack HI-HI Rad HI-Setpoint $3.45e-5$ uCi/cc for Noble Gas

This would correspond to a UE ie greater than $2.2E04$ uCi/cc

From the ODCM:

2.2 GASEOUS EFFLUENT MONITOR SETPOINT DETERMINATION

Control 3.1.2 requires that an alarm setpoint be established for the noble gas effluent monitoring channels (RY26-075A(B), RY26-185A(B), RY26-285A(B), and RY26-076) to ensure that the release rate of radioactive materials does not exceed the limits of Control 3.2.2.1.a, which corresponds to a dose rate at the SITE BOUNDARY of 500 mrem/yr to the total body or 3000 mrem/yr to the skin

A Correct

B incorrect plausible to examinee who believes MAIN STEAM LINE HI HI RAD alarm indicates a leak from the main steam line that will result in the exposure of a member of the public in an Unrestricted Area exceeding limits and that the HiHI will result in escalation of E-plan

C incorrect plausible to examinee who believes South stack HI alarm will result in the exposure of a member of the public in an Unrestricted Area exceeding limits and that the HiHI will result in escalation of E- plan

D plausible to the examinee who does not recall the reactor hvac radiation alarm setpoints

A correct 003 RAD E-1 North Stack HI-HI Rad HI-Setpoint $3.45e-5$ uCi/cc for Noble Gas

B incorrect

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 41 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 2 |
| Difficulty: | 2.20 |
| System ID: | 1650585 |
| User-Defined ID: | Q# 41 BANK |
| Lesson Plan Objective: | LOT0720.03A |
| Topic: | Stack monitor |
| RO: | 3.9 |
| SRO: | 4.2 |
| KA#: | 295038 EK2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 1 | |
| | Group | 1 | |
| | KA # and Rating | 295038 EK2.04 3.9/4.2 | |
| | KA Statement | High Off-Site Release Rate Knowledge of the operational implications of the following concepts as they apply to HIGH OFF-SITE RELEASE RATE : Stack-gas monitoring system: Plant-Specific | |
| | Cognitive level | lower | |
| | Safety Function | 9 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | ARC -MCR-003 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 562030 | |
| | Question Source: (i.e. New, Bank, Modified) | bank 562030 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 562030 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

42

ID: 1454789

Points: 1.00

Unit 1 is operating at 100% power with the following:

- '1B' Core Spray Pump is operating in Full Flow Test

A reactor coolant leak occurs.

- RPV water level reaches -133"
- RPV pressure reaches 465 psig
- Drywell pressure reaches 3.0 psig

12 seconds later, which of the following describes the status of:

- (1) '1B' Core Spray Pump, and
- (2) HV-052-1F015B, CORE SPRAY LOOP B TEST BYPASS PCIV?

- (1) Tripped and restarted
(2) Closed and CANNOT be re-opened
- (1) Did not trip and is still running
(2) Closed and CAN be re-opened
- (1) Tripped and is NOT running
(2) Closed and CANNOT be re-opened
- (1) Did not trip and is still running
(2) Open

Answer: C

Answer Explanation

'C' is correct. The Core Spray initiation signal has been reached (high Drywell Pressure (Low RPV level -129 inches). As such, the 1B CS Pump trips (LOCA shed) and will re-sequence back on, but not until t=15 seconds (with offsite power available). Therefore, at t=12 seconds, the pump remains tripped. However, the Test Bypass valve auto-closed on the LOCA signal and will not re-open so long as the signal is present.

'A' is wrong. Plausible to the examinee who confuses the re-sequence time for the 'B'/'D' CS Pumps (i.e., t=15 sec, with offsite power available) with the re-sequence time for the 'A'/'C' CS Pumps (i.e., t=10 seconds, with offsite power available).

'B' is wrong. Plausible to the examinee who does not recognize that an initiation signal exists (thus, the pump did not LOCA shed), but who believes that the transient condition would result in closure of the Test Bypass valve.

'D' is wrong. Plausible to the examinee who does not recognize that an initiation signal exists; therefore, the pump is still running and the Test Bypass valve is still open.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 42 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1454789 |
| User-Defined ID: | Q# 42 BANK |
| Lesson Plan Objective: | LGSOPS0052.07 |
| Topic: | Core Spray Response to Coolant Leak When operating in Full Flow Test |
| RO: | 4.2 |
| SRO: | 4.3 |
| KA#: | 295031 EK2.03 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------|--|---|-------------------|--------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295031 EK2.03 4.2/4.3 | | |
| | KA Statement | Reactor Low Water Level WATER LEVEL Knowledge of the interrelations between REACTOR LOW WATER LEVEL and the following: Low pressure core spray | | |
| | Safety Function | 2 | | |
| | Cognitive level | higher | | |
| | 10 CFR 55 | 41.7 | | |
| | Technical Reference with Revision No: | E21-1040 sht1 | Rev #: | 5 0 |
| | Justification for Non SRO CFR Link: | N/A | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 895494 | | |
| | Question Source: (i.e. New, Bank, Modified) | bank | | |
| | Low KA Justification (if required): | N/A | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | No | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | A | | |
| | Comments | | | |
| | 833342 lost n random selection coin toss | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

43

ID: 1433212

Points: 1.00

Given the following:

- The Fire Brigade is fighting a fire in the warehouse.
- The Motor Driven Fire Pump started and immediately tripped on spurious overcurrent.
- The Diesel Driven Fire Pump is running and supplying the fire header with pressure at 97 psig.
- The overcurrent trip of the Motor Driven Fire Pump breaker is reset.

Which of the following describes the Motor Driven and Diesel Driven fire pump response?

- A. The Motor Driven Fire Pump starts and the Diesel Driven Fire Pump continues to run.
- B. The Motor Driven Fire Pump starts and the Diesel Driven Fire Pump stops immediately.
- C. The Motor Driven Fire Pump remains in standby and the Diesel Driven Fire Pump continues to run.
- D. The Motor Driven Fire Pump starts and, assuming header pressure rises to and remains above 100 psig, the Diesel Driven Fire Pump stops 5 minute later.

Answer: A

Answer Explanation

- A Correct per ARC-MCR-005 A-1 Motor driven fire pump starts at 100 psig lowering there is no auto shutdown of the diesel driven fire pump
- B Incorrect Plausible to the examinee who believe there is a lead lag arrangement similar to the condensate transfer system
- C Incorrect Plausible to the examinee who does not recall the 100 psi start set point for the Motor Driven Fire Pump
- D Incorrect Plausible to the examinee who believe there is a lead lag arrangement similar to the condensate transfer system

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 43 Info | |
|--------------------------|-------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| | |
| System ID: | 1433212 |
| User-Defined ID: | Q# 43 MODIFIED |
| Lesson Plan Objective: | LGSOPS0022.5A |
| | |
| Topic: | Fire pp operation |
| RO: | 2.5 |
| SRO: | 2.6 |
| KA#: | 60000 AK2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|---------------|------------------|
| Level | RO | | |
| Tier | 1 | | |
| Group | 1 | | |
| KA # and Rating | 60000 AK2.04 2.5/2.6 | | |
| KA Statement | Plant Fire On Site Knowledge of the interrelations between PLANT FIRE ON SITE and the following: Breakers / relays / and disconnects | | |
| Cognitive level | lower | | |
| Safety Function | 8 | | |
| 10 CFR 55 | 41.7 | | |
| Technical Reference with Revision No: | ARC-MCR-005 A-1 ARC-MCR-005 B-2 | Rev #: | 0 1 0 7 |
| Justification for Non SRO CFR Link: | NA | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | modified South Texas project bank | | |
| Question Source: (i.e. New, Bank, Modified) | Modified South Texas project bank | | |
| Low KA Justification (if required): | N/A | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Modified | | |
| ILT | | | |
| Supplied Ref (if appropriate): (i.e. ABN-##) | None | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

44

ID: 1454411

Points: 1.00

Unit 1 was operating at 100% power when an accident occurred. Current plant conditions are as follows:

- An ATWS is in progress
- Reactor power is 13%
- 'A' RPS status lights are lit
- 'B' RPS status lights are out
- The second RPV level lowering has just been completed per T-117
- RPV level is being maintained between -186" and -161"
- No floor actions for the second lowering have been taken

Which one of the following will allow insertion of rods to terminate the ATWS

- A. Close the 46-1F034 CRD Charging Water Header Supply AND reset RDCS
- B. Bypass the RWM AND reset RDCS
- C. Close the 46-1F034 CRD Charging Water Header Supply AND bypass the RWM
- D. Bypass the RWM AND do NOT reset RDCS

Answer: B

Answer Explanation

- A Incorrect Close the 46-1F034 CRD charging water header supply valve is not required for an electrical ATWS
- B Correct Bypassing the RWM is required since it is enforcing and rods will be inserted directly to position 00 and not to bank position. since level is below -129 inches RDCS will lose power on the LOCA signal and need to be reset.
- C Incorrect Close the 46-1F034 CRD charging water header supply valve is not required for an electrical ATWS
- D Incorrect plausible to examinee who either does not recognize that a LOCA signal is present or that RDCS will need to be reset after the 4 KV bus is reset

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 44 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1454411 |
| User-Defined ID: | Q# 44 NEW |
| Lesson Plan Objective: | LGSOPS2003.03 |
| Topic: | ATWS RMCS |
| RO: | 3.8 |
| SRO: | 3.9 |
| KA#: | 295037 EK2.11 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 1 | |
| | Group | 1 | |
| | KA # and Rating | 295037 EK2.11 | |
| | KA Statement | Knowledge of the interrelations between SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN and the following: RMCS: Plant-Specific. | |
| | Cognitive level | higher | |
| | Safety Function | 1 | |
| | 10 CFR 55 | 41.7 | |
| | Technical Reference with Revision No: | | Rev #: |
| | Justification for Non SRO CFR Link: | N/A | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | |
| | Question Source: (i.e. New, Bank, Modified) | new | |
| | Low KA Justification (if required): | N/A | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

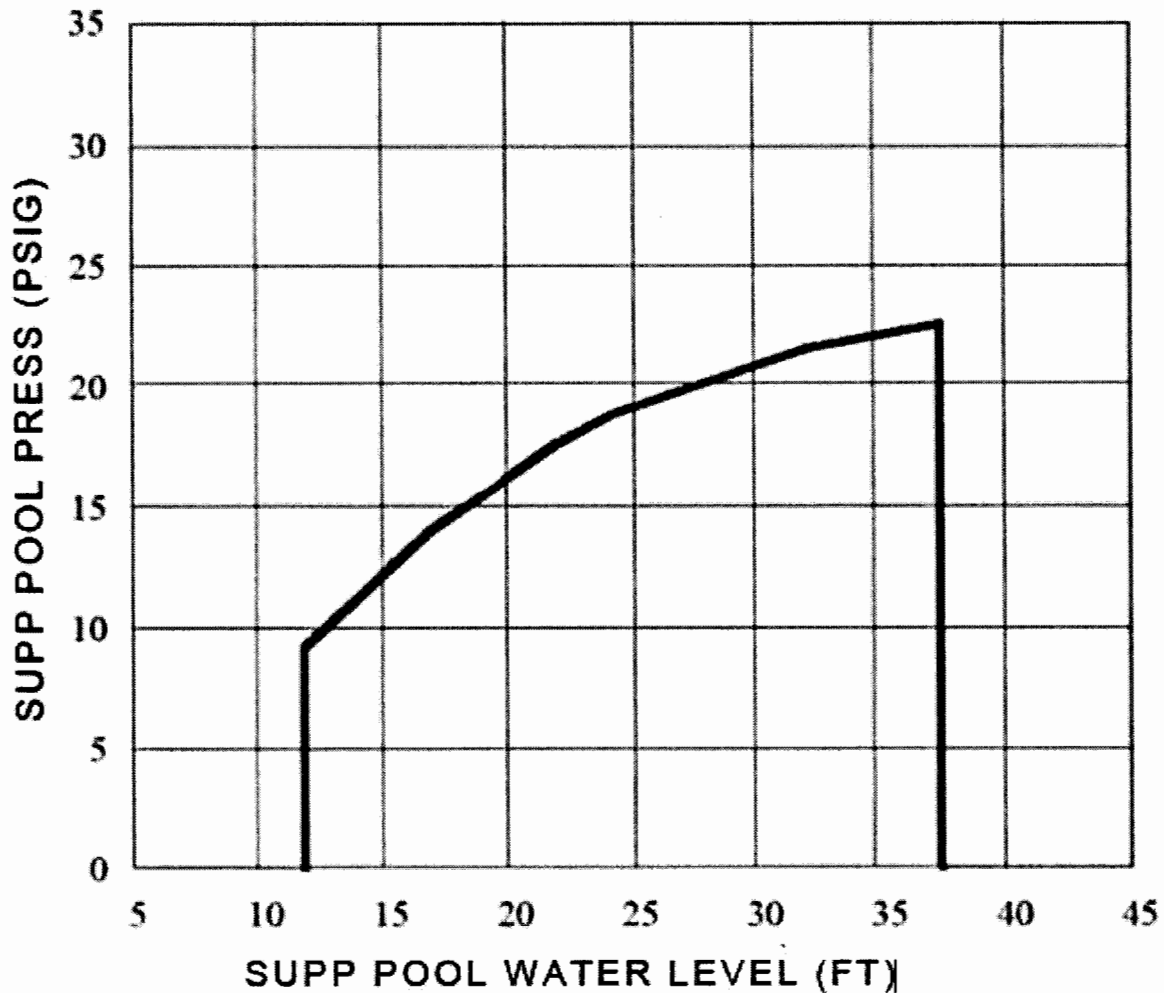
45

ID: 1433350

Points: 1.00

Unit 1 is operating at 100% power when a Large drywell leak occurs.

- Suppression pool pressure is 20 psig up slow
- Suppression pool level is 15 feet steady



EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

WHICH of the following describes the action to be taken and the reason for performing this action?

| Action | Reason |
|--|--|
| A. Rapidly depressurize per T-101 RPV Control | Reduce Drywell pressure and temperature through the combined effects of evaporative and convective cooling |
| B. Emergency blowdown per T-112 Emergency Blowdown | Reduce Drywell pressure and temperature through the combined effects of evaporative and convective cooling |
| C. Emergency blowdown per T-112 Emergency Blowdown | Ensure that the pressure suppression function of the primary containment is maintained |
| D. Rapidly depressurize per T-101 RPV Control | Ensure that the pressure suppression function of the primary containment is maintained |

Answer: C

Answer Explanation

Refer to T-102, specifically, the PC/P (Primary Containment Pressure) leg. Only when operators determine that the SAFE side of the Pressure Suppression Pressure (PSP) Curve, PC/P-3, cannot be maintained does Step PC/P-11 direct operators to perform a T-112 Emergency Blowdown. The T-102 Bases for Step PC/P-11 describes the PSP purpose as "to assure the pressure suppression function of primary containment is maintained." Rapidly depressurize per T-101 is incorrect, plausible to the examinee who plots the graph incorrectly and believes they are on the safe side of PC/P-3 but approaching the unsafe side. Reduce Drywell pressure and temperature through the combined effects of evaporative and convective cooling is incorrect but plausible to the examinee who confuses the drywell spray basis with the depressurization basis.

.From the stem A LOCA is in progress causing Drywell pressure to rise, this will cause pool pressure to rise following drywell pressure at some at some slightly lower pressure based on pool level (Downcomer submergence)

| | | |
|---|---|--|
| A | Incorrect Rapidly depressurize per T-101 RPV Control | Reduce Drywell pressure and temperature through the combined effects of evaporative and convective cooling |
| B | Incorrect Emergency blowdown per T-112 Emergency Blowdown | Reduce Drywell pressure and temperature through the combined effects of evaporative and convective cooling |
| C | Correct Emergency blowdown per T-112 Emergency Blowdown | Ensure that the pressure suppression function of the primary containment is maintained |
| D | Incorrect Rapidly depressurize per T-101 RPV Control | Ensure that the pressure suppression function of the primary containment is maintained |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 45 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 2.50 |
| System ID: | 1433350 |
| User-Defined ID: | Q# 45 NEW |
| Lesson Plan Objective: | LLOT1560.4 |
| Topic: | Recall reason for Emergency Blowdown based on PSP |
| RO: | 3.7 |
| SRO: | 4.1 |
| KA#: | 295024 EK3.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 1 | |
| | Group | 1 | |
| | KA # and Rating | 295024 EK3.04 (3.7/4.1) | |
| | KA Statement | 295024 High Drywell Pressure Knowledge of the reasons for the following responses as they apply to HIGH DRYWELL PRESSURE: EK3.04 †Emergency depressurization | |
| | Cognitive level | higher | |
| | Safety Function | 5 | |
| | 10 CFR 55 | 41.5, 41.10 | |
| | Technical Reference with Revision No: | T-101 T-101 bases T-102 T-102 bases | Rev #: |
| | Justification for Non SRO CFR Link: | N/A | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | NEW | |
| | Question Source: (i.e. New, Bank, Modified) | NEW | |
| | Low KA Justification (if required): | N/A | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | N/A | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | None | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

46

ID: 1649449

Points: 1.00

Unit 2 is in OPCON 3 when a LOCA occurs.

Suppression Pool pressure is 4 psig

Shutdown cooling inboard suction valve HV-51-2F009 cannot be opened

The CRS directs performance of S41.7.B Use Of SRV's and Suppression Pool Cooling As An Alternate Shutdown Cooling Method.

Which of the following describes the minimum reactor pressure required to ensure sufficient flow rate and the suction source(s) allowed for injection (Suppression Pool and/or CST) after raising RPV level \geq 150 inches?

| | <u>Minimum Reactor Pressure</u> | <u>Suction Source(s) Allowed For Injection</u> |
|----|---------------------------------|--|
| A. | 50 psig | Suppression Pool ONLY |
| B. | 54 psig | Suppression Pool ONLY |
| C. | 50 psig | Suppression Pool AND CST |
| D. | 54 psig | Suppression Pool AND CST |

Answer: B

Answer Explanation

- A Incorrect plausible to examinee who recalls the 50 psi limit for SRV to open but does not recall that the limit is 50 psi above pool pressure
- B Correct reactor pressure must be 50 psig > than pool pressure and after level is raised injection with cond. transfer and CRD is secured.
- C Incorrect plausible to examinee who recalls the 50 psi limit for SRV to open but does not recall that the limit is 50 psi above pool pressure and or does not recognize that after level is raised injection with cond. transfer and CRD is secured
- D Incorrect after level is raised injection with cond. transfer and CRD is secured

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 46 Info | |
|--------------------------|---------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.50 |
| System ID: | 1649449 |
| User-Defined ID: | Q# 46 NEW |
| Lesson Plan Objective: | LOT1550.03 (ON-120) |
| Topic: | alt SDC |
| RO: | 3.6 |
| SRO: | 3.8 |
| KA#: | 295021 AK3.05 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|--|-----------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 1 | |
| | Group | 1 | |
| | KA # and Rating | 295021 AK3.05 3.6/3.8 | |
| | KA Statement | Loss of Shutdown Cooling Knowledge of the reasons for the following responses as they apply to LOSS OF SHUTDOWN COOLING : Establishing alternate heat removal flow paths | |
| | Cognitive level | lower | |
| | Safety Function | 4 | |
| | 10 CFR 55 | 41.5 | |
| | Technical Reference with Revision No: | S.41.7.B | Rev #: 8 |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | |
| | Question Source: (i.e. New, Bank, Modified) | new | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

47

ID: 1649473

Points: 1.00

Unit 1 plant conditions are as follows:

- RPV level is being controlled from the Remote Shutdown Panel (RSP) per SE-1
- RPV level is + 50 inches up slow
- RCIC flow is zero gpm at 2400 rpm
- RPV pressure is 950 psig, down slow

WHICH ONE of the following identifies a **required** action and the reason it is necessary?

| | <u>ACTION</u> | <u>REASON</u> |
|----|---------------------------------------|--|
| A. | Trip HPCI immediately | Prevent excessive RPV cooldown due to uncontrolled steam usage |
| B. | Trip HPCI if level exceeds +54 inches | Prevent excessive RPV cooldown due to uncontrolled steam usage |
| C. | Trip HPCI immediately | Prevent reactor overfill due to fire induced spurious initiation |
| D. | Trip HPCI if level exceeds +54 inches | Prevent reactor overfill due to fire induced spurious initiation |

Answer: D

| |
|---------------------------|
| Answer Explanation |
|---------------------------|

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

NOTE

1. Reactor level rise without explanation may be caused by a spurious, fire caused HPCI initiation. Step 4.3.2 is a PROMPT Action from the fire safe shutdown analysis, to be completed within 4 minutes, to stop HPCI injection

AND prevent reactor overfill.

2. HPCI Emergency Shutdown Key (HPCI SHUTDOWN KEY H2191) is already installed in HS-56-*62 in Remote Shutdown Panel (RSP) *0-C201

SE-1 step 4.3.2

IF Reactor level is rising above +54 inches

AND continues to rise after RCIC flow is reduced,

THEN using HPCI Emergency Shutdown Key H2191

PLACE HS-56-*62, "HPCI EMERG S/D SWITCH," to "OFF" at *0C201, to trip HPCI.

- D correct per step 4.3.2 do not trip HPCI until level is > +54 rising with no injection. HPCI would normally run to maintain level between -39 and +54 HPCI is tripped to prevent vessel overfill
- A Incorrect plausible to examinee who believe that HPCI must always be tripped at the RSP as a 4 minute immediate action and / or believe the basis is to limit cooldown.
- B Incorrect plausible to examinee who does not recall basis for tripping HPCI but remembers that injection through core spray will cause pressure reduction (will not exceed cooldown rate)
- C Incorrect for the reasons stated above

K/A does not differentiate between main turb and HPCI/RCIC at LGS MSIVs are closed during MCR abandonment there is no procedural basis or UFSAR information on separating gen. from grid unable to write a question on main turb for this K/A

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 47 Info | |
|--------------------------|--------------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 2 |
| Difficulty: | 2.00 |
| | |
| System ID: | 1649473 |
| User-Defined ID: | Q# 47 MODIFIED |
| Lesson Plan Objective: | SE-1 TRAINING |
| | |
| Topic: | SE-1 HPCI Shutdown Requirement |
| RO: | 3.7 |
| SRO: | 3.8 |
| KA#: | 295016 AK3.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|-----------|--------|
| Level | RO | | |
| Tier | 1 | | |
| Group | 1 | | |
| KA # and Rating | 295016 AK3.02 | | |
| KA Statement | Control Room Abandonment Knowledge of the reasons for the following responses as they apply to CONTROL ROOM ABANDONMENT : Turbine trip | | |
| Cognitive level | low | | |
| Safety Function | 7 | | |
| 10 CFR 55 | 41.5 | | |
| Technical Reference with Revision No: | SE-1 | Rev #: | 7 3 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | 586875 modified | | |
| Question Source: (i.e. New, Bank, Modified) | 586875 modified | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 586875 modified | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | y | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

48

ID: 1454791

Points: 1.00

Unit 2 plant conditions are as follows:

- Startup in progress with Reactor Pressure at 380 psig
- Normal Electrical lineup

A small coolant leak results in Drywell pressure rising to 2 psig and all automatic actions occur as designed.

WHICH ONE of the following identifies the source of power to Safeguard and Non-Safeguard DC loads one (1) minute later?

(No operator action has been taken.)

SAFEGUARD DC SOURCE

- A. Batteries
- B. Batteries
- C. Battery Chargers
- D. Battery Chargers

NON-SAFEGUARD DC SOURCE

- Batteries
- Battery Chargers
- Batteries
- Battery Chargers

Answer: C

Answer Explanation

BATTERY CHARGERS - SAFEGUARD DC, BATTERIES - NON-SAFEGUARD DC is correct. All Battery Chargers are powered from Safeguard AC Power. With the provided conditions, a LOCA signal will occur. This will result in the tripping of all Non-Safeguard loads powered from Safeguard Buses. Two of the Non-Safeguard Battery Chargers will shunt trip (2BC01 and 2BC02) and one (2BC) is powered from D224-G-D MCC which will trip on a LOCA and must be manually reset in the MCR. All of the Divisional Battery Chargers will be re-energized automatically when the respective 480 VAC Load Center automatically re-closes 3 seconds following the LOCA signal.

BATTERIES - SAFEGUARD DC, BATTERIES - NON-SAFEGUARD DC is incorrect. This would be correct immediately following the LOCA as the 480 VAC Load Center will trip on the LOCA signal which will de-energize all of the battery chargers. However, 3 seconds later the Load Center Breaker will auto re-close and re-energize the Safeguard Battery Chargers. The Non-Safeguard Battery Chargers will shunt trip and must be manually reset. Until they are reset, Non-Safeguard DC loads will be supplied from batteries.

BATTERIES - SAFEGUARD DC, BATTERIES - NON-SAFEGUARD DC is incorrect. A common mistake is that the Non-Safeguard Battery Chargers are powered from Non-Safeguard AC which means they would be unaffected by a LOCA signal.

BATTERY CHARGERS - SAFEGUARD DC, BATTERY CHARGERS - NON-SAFEGUARD DC is incorrect. A common mistake is that the Non-Safeguard Battery Chargers are not shunt tripped.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 48 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 5 |
| Difficulty: | 2.00 |
| System ID: | 1454791 |
| User-Defined ID: | Q # 48 BANK |
| Lesson Plan Objective: | LGSOPS0095 - 7 |
| Topic: | Effect of LOCA signal on Battery Chargers |
| RO: | 3.6 |
| SRO: | 3.7 |
| KA#: | 295003 AA1.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|-----------|---------|
| Level | RO | | |
| Tier | 1 | | |
| Group | 1 | | |
| KA # and Rating | 295003 AA1.04 3.6/3.7 | | |
| KA Statement | Partial or Complete Loss of A.C. Power Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : D.C. electrical distribution system | | |
| Cognitive level | higher | | |
| Safety Function | 6 | | |
| 10 CFR 55 | 41.7 | | |
| Technical Reference with Revision No: | E-33 SE-10-1 | Rev #: | 45 6 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 833366 | | |
| Question Source: (i.e. New, Bank, Modified) | Bank 833366 | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | minor rev to match KA | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | Y | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | A | | |
| Comments | | | |

K6. Knowledge of the effect that a loss or malfunction of the following will have on the D.C. ELECTRICAL DISTRIBUTION :

(CFR: 41.7 / 45.7)

K6.01 A.C. electrical distribution
..... 3.2 3.5

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

49

ID: 1455250

Points: 1.00

Plant conditions are as follows:

- 0A MCR Chiller in service
- 1A DW Chiller in service
- 2B DW Chiller in service
- D12 D/G running for its monthly surveillance test
- 0B ESW is running, an EO has just closed 11-1013 UNIT 1 SW TO LOOP B ESW and 11-2013 UNIT 2 SW TO LOOP B ESW per the D12 surveillance test.

Shortly thereafter, 0B ESW pump trips

WHICH ONE of the following groups of equipment lose cooling water?

- A. 1A Drywell Chiller, Unit 1 HPCI, and Unit 1 RCIC
- B. 2A Drywell Chiller, Unit 2 HPCI, and Unit 1 RCIC
- C. Unit 2 HPCI, and Unit 2 RCIC
- D. 0A MCR Chiller, Unit 1 HPCI, and Unit 1 RCIC

Answer: C

Answer Explanation

Reference SIM-12 drawing or P&ID 11 sheet 2 and 3 with no flow in B ESW loop and the 11-1013 closed flow is lost to the 0B MCR chiller unit 2 HPCI and unit 2 RCIC. The lineup for sw to HPCI and RCIC is as follows 11-1010 unit 1 SW to unit 1 A ESW provides a flow path for SW to unit 1 HPCI and RCIC. 11-2013 unit 2 SW to unit 2 B ESW provides flow to unit 2 HPCI and RCIC

'C' is correct: Unit 2 HPCI, and Unit 2 RCIC

'B' is wrong: plausible to the examinee who doesn't recall the chillers cooled by ESW

'C' is wrong: (plausible to the examinee who doesn't recall the chillers cooled by ESW or that unit 2 HPCI sw is from the 11-2013.

'D' is wrong: Plausible to the examinee who reverses the 11-1010 and 11-2013 loads .

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 49 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 2.50 |
| System ID: | 1455250 |
| User-Defined ID: | Q# 49 MODIFIED |
| Lesson Plan Objective: | LGSOPS0011.7A |
| Topic: | Recognize Service Water/ESW shared loads lost |
| RO: | 3.3 |
| SRO: | 3.4 |
| KA#: | 295018 AA1.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|----|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295018 AA1.02 3.3/3.4 | | |
| | KA Statement | Partial or Complete Loss of Component Cooling Water Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER : System loads | | |
| | Cognitive level | higher | | |
| | Safety Function | 8 | | |
| | 10 CFR 55 | 41.7 | | |
| | Technical Reference with Revision No: | Sim-m-0012 | Rev #: | 12 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Modified 1150001 | | |
| | Question Source: (i.e. New, Bank, Modified) | Modified 1150001 | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Modified 1150001 | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

50

ID: 1455199

Points: 1.00

Plant conditions are as follows:

- Both Units are in their normal/preferred electrical lineup

A grid disturbance causes a trip of the 10 Station Aux Bus Supply Breaker (105).

20 seconds after the trip of the 105 breaker, the PRO reviews the 4KV breaker alignment and reports the following:

- D13 Bus is de-energized
- D13 D/G is running unloaded
- All other 4 KV buses are energized

WHICH ONE of the following identifies the likely cause of the D13 Safeguard Bus remaining de-energized?

- A. D13 D/G Lockout
- B. D13 Bus Lockout
- C. 20 Station Aux Bus Lockout
- D. 101 Safeguard Transformer Lockout

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Initially, D13 is powered from the 101 Safeguard Transformer through the 101-D13 breaker. When the 10 Station Aux Bus Supply Breaker (105) trips, the 101 Safeguard Transformer is de-energized, causing the 101-D13 breaker to trip on 101 Transformer Undervoltage ($<70\%$). One (1) second later, the 201-D13 breaker should auto-close to re-energize the D13 bus. Similarly, at 0.5 seconds after the dead-bus condition on D13, the D13 D/G will get an auto-start signal. However, if the 201-D13 breaker did close, the D13 DG Output breaker will not attempt to auto-close when all of its other closing permissives are satisfied. The stem conditions indicating that the D13 bus is still de-energized at $T=20$ seconds from the 105 breaker trip means that neither the 201-D13 breaker nor the D13 D/G Output breaker have closed in on the bus.

'B' is correct. A D13 Bus Lockout will prevent both the 201-D13 and D13 D/G Output breakers from closing in on the bus (see ARC-MCR-121, A1). D12 and D14 bus are supplied from 201 bus and unaffected by the trip of the 105 breaker. D11 DG will start on the undervoltage on D11 bus when 101 bus losses power and the D11/101 breaker trips, but the DG will not close in on the bus because before the DG gets up to speed the 201/D11 breaker will close.

'A' is wrong because it suggests that a D13 D/G Lockout would not only prevent the D13 D/G Output breaker from closing (which it will), but also prevent the 201-D13 feeder breaker from closing (which it WON'T). Plausible to the examinee who either mis-understands the breakers that are affected by a lockout, or who fails to review the D13 D/G Lockout ARC (ARC-MCR-121, C1).

'C' is wrong. Although a 20 Station Aux Bus Lockout will prevent the 201-D13 breaker from closing (because the 201 Transformer voltage is $< 70\%$), it will NOT prevent closure of the D13 D/G Output breaker.

'D' is wrong. See ARC-MCR-120, F1. Only the 101 Safeguard Transformer Supply Breaker (from the 10 Station Aux Bus) receives a direct trip from this kind of lockout. This lockout will not prevent closure of the 201-D13 feeder breaker, or of the D13 D/G Output breaker. Plausible to the examinee who either mis-understands the breakers that are affected by a lockout, or who fails to review the 101 Transformer Lockout ARC (ARC-MCR-120, F1).

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 50 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455199 |
| User-Defined ID: | Q# 50 BANK |
| Lesson Plan Objective: | LGSOPS0092A.4A |
| Topic: | Determining Cause of a De-energized 4 KV Safeguard Bus |
| RO: | 3.9 |
| SRO: | 4.0 |
| KA#: | 700000 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|--|--|--|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 1 | |
| | Group | 1 | |
| | KA # and Rating | 700000 AA1.05 3.9/4.0 | |
| | KA Statement | Generator Voltage and Electric Grid Disturbances Ability to operate and/or monitor the following as they apply to GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES: Engineered safety features | |
| | Cognitive level | higher | |
| | Safety Function | 6 | |
| | 10 CFR 55 | 41.5 | |
| | Technical Reference with Revision No: | E-0001 ARC-MCR-121 , A1 ARC-MCR-121 , C1 ARC-MCR-008 , A3 ARC-MCR-120 , F1 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 894256 | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 894256 | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 894256 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | 295003 AK2.03 | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

51

ID: 1649810

Points: 1.00

Unit 1 plant conditions are as follows:

- OPCON 5 with fuel handling in-progress per FH-105, Core Component Movement – Core Transfer
- The SRO on the refueling platform reports that a fuel bundle is being lowered into the core

While the bundle is being lowered, the RO reports that SRM "1B" count rate has risen from 230 cps to 475 cps.

WHICH ONE of the following describes the ability to continue lowering the bundle, and whether entry into ON-120, "Fuel Handling Problems" is required?

| | <u>Ability to Continue Lowering the Bundle into the Core</u> | <u>Entry into ON-120, "Fuel Handling Problems"</u> |
|----|--|--|
| A. | Bundle may NOT be lowered until count rate stabilizes | NOT Required |
| B. | Bundle may NOT be lowered until count rate stabilizes | Required |
| C. | Continued lowering of the bundle IS permitted | NOT Required |
| D. | Continued lowering of the bundle IS permitted | Required |

Answer: A

Answer Explanation

- A Correct Since SRM count rate doubled once, per FH-105 step 3.7.4 lowering of the bundle must stop until count rate stabilizes at a value of less than 2 doublings, and no spiking or indication of SRM inoperability exists, then lowering the bundle may be continued.
- B Incorrect ON-120 entry is only required if SRM count rate doubles twice (i.e. one doubling would be from 230 to 460, a second doubling would be from 460 to 920) plausible to examinee who confuses FH-105 action with ON-120 entry
- C Incorrect Plausible to examine who does not recall FH-105 requirements
- D Incorrect Plausible to examine who does not recall FH-105 requirements or the attachment 1 actions of ON-120

- Since SRM count rate doubled once, per FH-105 step 3.7.4 lowering of the bundle must stop until count rate stabilizes at a value of less than 2 doublings, and no spiking or indication of SRM inoperability exists, then lowering the bundle may be continued. ON-120 entry is only required if SRM count rate doubles twice (i.e. one doubling would be from 230 to 460, a second doubling would be from 460 to 920)

FH-105, ON-120

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 51 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 0 |
| Difficulty: | 2.00 |
| System ID: | 1649810 |
| User-Defined ID: | Q# 51 BANK |
| Lesson Plan Objective: | LLOT0760.10 |
| Topic: | OPCON 5 with fuel handling in-progress per FH-105, Core Componen |
| RO: | 3.4 |
| SRO: | 4.1 |
| KA#: | 295023 AA2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|------------------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295023 AA2.04 3.4/4.1 | | |
| | KA Statement | Refueling Accidents Ability to determine and/or interpret the following as they apply to REFUELING ACCIDENTS : †Occurrence of fuel handling accident | | |
| | Cognitive level | Lower | | |
| | Safety Function | 8 | | |
| | 10 CFR 55 | 41.10 | | |
| | Technical Reference with Revision No: | FH-105 ON-120 | Rev #: | 4 8 2 7 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 562362 | | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 562362 | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 562362 | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

52

ID: 1455248

Points: 1.00

WHICH ONE of the following describes the basis for performing an Emergency Blowdown when Drywell temperature cannot be restored and maintained below 340°F?

- A. Maintain ADS SRV availability
- B. Prevent RPV level instrument reference leg boiling
- C. Maintain downcomer vacuum breaker availability
- D. Drywell Spray using fire water will be unavailable

Answer: A

Answer Explanation

T-102, Subsequent steps in the drywell temperature (DW/T) control flowpath direct actions to rapidly shutdown the reactor and to emergency depressurize the RPV. These actions are appropriate, however, only if it has been determined that drywell temperature cannot be maintained below 340°F (i.e., the maximum temperature at which ADS is qualified and drywell design temperature). Step DW/T-10 ensures this condition has been met before allowing emergency RPV depressurization.

When it has been determined that drywell temperature cannot be maintained below 340°F, operators are directed to continue at Step DW/T-11.

A correct for the above reason

B incorrect. Plausible to the examinee who realizes that hi temperature in the DW may effect level indication

C Incorrect. Plausible to the examinee who recalls the solenoid operation of these valves, but does not recall that solenoids are for testing only

D incorrect. Plausible to the examinee who uses steam tables assumes saturated conditions and calculates 340 degrees will be about 130 psig. a steam leak in the drywell would be an isenthalpic process so without reactor pressure this calculation can not be assumed.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 52 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.40 |
| System ID: | 1455248 |
| User-Defined ID: | Q# 52 BANK 2015 NRC |
| Lesson Plan Objective: | LGSOPS1560.05 |
| Topic: | Basis for an Emergency Blowdown when Drywell temperature reaches 340 deg |
| RO: | 4.0 |
| SRO: | 4.1 |
| KA#: | 295028 EA2.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|--|-------------------|--------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295028 EA2.01 4.0/4.1 | | |
| | KA Statement | High Drywell Temperature Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE : Drywell temperature | | |
| | Cognitive level | lower | | |
| | Safety Function | 5 | | |
| | 10 CFR 55 | 41.10 | | |
| | Technical Reference with Revision No: | T-102 bases | Rev #: | 2 5 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 560429 2015 NRC test | | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 560429 | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 560429 | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| Comments | | | | |
| 560429 | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

53

ID: 1601451

Points: 1.00

Unit 1 is in OPCON 1.

DEHC is operating in "Speed Control Mode" with the main turbine at 1800 rpm ready to synchronize to the grid.

Which of the following completes the statement below

If ___(1)___ turbine speed sensors fail, the turbine will respond by ___(2)___

- A. (1) 2 out of 3
(2) closing the CVs and IVs but NOT the Stop Valves or ISVs
- B. (1) 2 out of 3
(2) tripping
- C. (1) 1 out of 2 twice
(2) closing the CVs and IVs but NOT the Stop Valves or ISVs
- D. (1) 1 out of 2 twice
(2) tripping

Answer: B

| Answer Explanation | |
|--------------------|--|
| B | Correct turbine trip logic for over speed or loss of speed signal is 2 out of 3 logic. loss of speed signal will cause a turbine trip |
| A | Incorrect but plausible to examinee who recalls that in speed control mode <ul style="list-style-type: none">• At > 100% rated speed, the CVs start to close,<ul style="list-style-type: none">a) From 101% to 103%, all the IVs closeb) At > 103%, CVs and IVs are closed and believes that a loss of speed signal will act the same as over speed in speed control mode |
| C | incorrect plausible to examinee who believes overspeed trip logic is the same as high level trip logic |
| D | incorrect plausible to examinee who believes overspeed trip logic is the same as high level trip logic and believes loss of speed signal will act the same as overspeed in speed control mode as described in "A" |
| | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 53 Info | |
|--------------------------|----------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1601451 |
| User-Defined ID: | Q# 53 NEW |
| Lesson Plan Objective: | LGSOPSOO31B.01D |
| Topic: | overspeed trip logic |
| RO: | 3.1 |
| SRO: | 3.1 |
| KA#: | 295005 AA2.03 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|--|---------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 1 | |
| | Group | 1 | |
| | KA # and Rating | 295005 AA2.03 3.1/3.1 | |
| | KA Statement | Main Turbine Generator Trip Ability to determine and/or interpret the following as they apply to MAIN TURBINE GENERATOR TRIP : Turbine valve position | |
| | Cognitive level | lower | |
| | Safety Function | 3 | |
| | 10 CFR 55 | 41.5 | |
| | Technical Reference with Revision No: | LGSOPS001B | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | |
| | Question Source: (i.e. New, Bank, Modified) | new | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new6 | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

54

ID: 1649516

Points: 1.00

SRVs are automatically cycling due to high reactor pressure.

WHICH one of the following describes the reason SRVs are manually opened per T-101?

- A. Lower the rate of inventory loss
- B. Ensure SBLC can inject at its design flow
- C. Reduce the potential for a stuck safety/relief valve
- D. Minimize likelihood of a downcomer vacuum breaker failure

Answer: C

| |
|---------------------------|
| Answer Explanation |
|---------------------------|

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

LGS TRIP Step RC/P-7 is a decision diamond that has operators evaluate whether or not any of the SRVs are cycling.

"SRV cycling" is defined as multiple, closely sequenced SRV actuations where the SRV opens as RPV pressure exceeds the respective safety lift setpoint and closes as RPV pressure drops below the respective reset setpoint. SRV cycling is undesirable and warrants prompt manual action for the following reasons:

- It exerts significant dynamic loads upon the RPV, the SRV tail pipes and supporting structures, and the primary containment.
- Shrink and swell associated with SRV actuations cause RPV level fluctuations that complicate RPV level control actions.
- Under failure-to-scram conditions, the consequent RPV level and RPV pressure oscillations can result in significant reactor power transients.
- **The potential for a stuck open SRV is increased.**

The frequency at which SRV actuations are judged to constitute "cycling" is dependent on the effect of the actuations upon reactor power, RPV level, and RPV pressure, the effectiveness of automatic control systems, the practicability of manual control, and the availability of personnel for performance of manual control functions.

RC/P-8 Manually open SRVs until RPV press drops to 990 psig

DISCUSSION

LGS TRIP Step RC/P-8 is entered as the result of a "YES" response to Step RC/P-7, indicating that one or more SRVs are cycling. SRV cycling can be terminated by reducing RPV pressure to below the lowest SRV safety lift setpoint. Step RC/P-8 directs actions to reduce RPV pressure to the RPV pressure that corresponds to the point at which all main turbine bypass valves will be fully open (990 psig), a value much lower than the lowest SRV safety lift setpoint.

- A Incorrect plausible to the examinee who recalls that 990 psi will keep max amount of steam to bypass valves, however this is the reason for not going below 990 not why pressure is reduced by manually opening SRV's
- B Incorrect plausible to examinee who does not recall SLC is a positive displacement pump and that discharge pressure will not effect pump flow rate
- C Correct
- D Incorrect plausible to the examinee who does not evaluate how long it will take for the steam in the downcomer to condense to the point of opening the downcomer vacuum breaker. with the same 1 or 2 SRVs cycling on pressure there will not be enough time for steam to condense to the point of causing vacuum breaks rapidly cycling for potential to stick or break.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 54 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------|--------|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|---|--|--|-----------------|-----------------------|--|--|--------------|--|--|--|-----------------|-------|--|--|-----------------|---|--|--|-----------|-------|--|--|--|-------|-----------|--------|--|-----|--|--|---|----------------------|--|--|--|----------------------|--|--|--|-----|--|--|---|----------------------|--|--|-----|--|--|--|---|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1649516 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 54 BANK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS1560.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | T-101 - Recall Basis for Step RC/P-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 295025 2.4.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">1</td> </tr> <tr> <td>Group</td> <td colspan="3">1</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">295025 2.4.18 3.3/4.0</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">High Reactor Pressure Knowledge of the specific bases for EOPs</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">lower</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">3</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>T-101</td> <td>Rev #:</td> <td>2 2</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">560722 bank modified</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">560722 bank modified</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">560722 bank modified</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e., A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 1 | | | Group | 1 | | | KA # and Rating | 295025 2.4.18 3.3/4.0 | | | KA Statement | High Reactor Pressure Knowledge of the specific bases for EOPs | | | Cognitive level | lower | | | Safety Function | 3 | | | 10 CFR 55 | 41.10 | | | Technical Reference with Revision No: | T-101 | Rev #: | 2 2 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | 560722 bank modified | | | Question Source: (i.e. New, Bank, Modified) | 560722 bank modified | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 560722 bank modified | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e., A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 295025 2.4.18 3.3/4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | High Reactor Pressure Knowledge of the specific bases for EOPs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | lower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | T-101 | Rev #: | 2 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | 560722 bank modified | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | 560722 bank modified | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 560722 bank modified | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e., A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

55

ID: 1649556

Points: 1.00

Unit 1 is in OPGON 5 when the following occurs

- Alarm 115-G5 1B-1D RHR Pump Room Flood has alarmed
- An EO reports several inches of water on the floor in the 1B-1D RHR pump room
- The EO reports the leak is on the RHR suction pipe BETWEEN the RHR suction valve and the RHR pump.
- Suppression pool level is 21 feet 10 inches down slow

Given the following procedures

- 1 ON-110 Loss of Primary Containment
- 2 T-102 Primary Containment Control
- 3 T-103 Secondary Containment Control

Which of the procedures listed above must be entered at this time?

- A. 2 and 3 ONLY
- B. 1 and 3 ONLY
- C. 1 and 2 ONLY
- D. 1, 2 and 3

Answer: A

Answer Explanation

- A Correct symptom for on-110 loss of primary containment include observation of a primary containment breach and are only required when primary containment is required per Tech Specs. T-103 entry includes Room flooding alarm condition for areas in Table SCC-1 which include RHR pump rooms. T-102 entry is not required until suppression pool level drops below 22 feet
- B symptom for on-110 loss of primary containment include observation of a primary containment breach and are only required when primary containment is required per Tech Specs. T-102 is require (<22" pool level) regardless of OPGON
- C Incorrect symptom for on-110 loss of primary containment include observation of a primary containment breach and are only required when primary containment is required per Tech Specs. T-103 entry required due to RHR room flood alarm
- D Incorrect symptom for on-110 loss of primary containment include observation of a primary containment breach and are only required when primary containment is required per Tech Specs.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 55 Info | |
|--------------------------|------------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.50 |
| System ID: | 1649556 |
| User-Defined ID: | Q# 55 NEW |
| Lesson Plan Objective: | LGSOPS1560.04 |
| Topic: | low pool level AOP/EOP entry |
| RO: | 4.5 |
| SRO: | 4.7 |
| KA#: | 295030 2.4.4 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|--------|-----------------------|
| Level | RO | | |
| Tier | 1 | | |
| Group | 1 | | |
| KA # and Rating | 295030 2.4.4 4.5/4.7 | | |
| KA Statement | Low Suppression Pool Water Level Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures. | | |
| Cognitive level | higher | | |
| Safety Function | 5 | | |
| 10 CFR 55 | 41.10 | | |
| Technical Reference with Revision No: | ON-110 T-102 T-103 | Rev #: | 6 2 5 2 3 |
| Justification for Non SRO CFR Link: | N/A | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| Question Source: (i.e. New, Bank, Modified)2.4.4 | new | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

56

ID: 1671239

Points: 1.00

Unit 2 is operating at 50% power when a feedwater malfunction results in the following:

- Reactor level begins lowering
- 107-H1 REACTOR WATER LEVEL BELOW LEVEL 3 TRIP is alarmed
- The "A" RPS trip system is deenergized
- The feedwater system restores level to +35 inches
- PMS indicates reactor level reached +10.5 inches

WHICH ONE of the following identifies the required action in accordance with OT-117 RPS Failures?

- A. Perform a GP-4 Shutdown
- B. Reset "A" RPS trip system half SCRAM AND insert a manual half SCRAM on RPS trip system "B"
- C. Maintain half SCRAM on RPS trip system "A" AND do NOT insert a manual half SCRAM on RPS trip system "B"
- D. Immediately SCRAM Unit 2

Answer: A

Answer Explanation

With reactor level at 10.5 it is possible that one and only one of the Reactor level trip unit would actuate.

Requires the candidate to understand that with Reactor level Trip in alarm and one systems of RPS energized that entry into OT-117 is required.

A is correct failure to SCRAM in retrospect requires a GP-4 shutdown

B incorrect, plausible to the examinee who believe that since A side worked only a B side half SCRAM needs to be inserted ON-117

C incorrect but plausible to examinee who believe that with either A or B RPS INOP maintaining 1 channel in tripped condition will satisfy the LCO

D incorrect, plausible to the examinee who confuses failure to SCRAM in retrospect with failure to SCRAM in progress

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 56 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------|-------------|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|---|--|--|-----------------|-----------------------|--|--|--------------|--|--|--|-----------------|------|--|--|-----------------|---|--|--|-----------|-------|--|--|---------------------------------------|-----------------------------|--------|-------------|-------------------------------------|-----|--|--|--|-----|--|--|---|-----|--|--|-------------------------------------|-----|--|--|---|-----|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1671239 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 56 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS1540.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SCRAM Emergency Procedures | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 4.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 295006 2.4.46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">1</td> </tr> <tr> <td>Group</td> <td colspan="3">1</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">295006 2.4.46 4.2/4.2</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">SCRAM Emergency Procedures / Plan: Ability to verify that the alarms are consistent with the plant conditions.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">High</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">1</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>OT-117 ARC-MCR-107 G1</td> <td>Rev #:</td> <td>1 1 0</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">N/A</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">New</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">New</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">N/A</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">New</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">None</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 1 | | | Group | 1 | | | KA # and Rating | 295006 2.4.46 4.2/4.2 | | | KA Statement | SCRAM Emergency Procedures / Plan: Ability to verify that the alarms are consistent with the plant conditions. | | | Cognitive level | High | | | Safety Function | 1 | | | 10 CFR 55 | 41.10 | | | Technical Reference with Revision No: | OT-117 ARC-MCR-107 G1 | Rev #: | 1 1 0 | Justification for Non SRO CFR Link: | N/A | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | | Question Source: (i.e. New, Bank, Modified) | New | | | Low KA Justification (if required): | N/A | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | New | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | None | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 295006 2.4.46 4.2/4.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | SCRAM Emergency Procedures / Plan: Ability to verify that the alarms are consistent with the plant conditions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | OT-117 ARC-MCR-107 G1 | Rev #: | 1 1 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | New | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | New | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

57

ID: 1601473

Points: 1.00

Unit 1 plant conditions:

- Div 4 DC is lost
- Operators enter E-1FD, 'Loss of Div 4 125 VDC Bus 1FD'

WHICH ONE of the following identifies the type of manual isolation of the MCR directed by E-1FD, and the reason why?

- A. Radiation Isolation, to ensure outside air is isolated to the MCR
- B. Chlorine Isolation, to ensure outside air is isolated to the MCR
- C. Chlorine Isolation, to maintain positive MCR pressure
- D. Radiation Isolation, to maintain positive MCR pressure

Answer: B

Answer Explanation

B is correct with a loss of power to the isolation logic for one of two in series outside isolation dampers there is no assurance that if some other loss of power incident were to happen that it will ensure that a full chlorine isolation will occur during an actual chlorine accident. Therefore, E-1FD directs that, upon loss of a division of DC, a chlorine isolation be performed to ensure outside air is isolated to the MCR.

A incorrect plausible to the examinee who does not recall which isolation is directed from E-1FD and does not recall the difference between chlorine isolation and radiation isolation suction paths

C incorrect plausible to the examinee who believes chlorine isolation keeps the MCR positive to keep Chlorine out

D Incorrect plausible to the examinee who believes a radiation isolation is directed from E-1FD

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 57 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1601473 |
| User-Defined ID: | Q# 57 BANK |
| Lesson Plan Objective: | LGSOPS0078.04 |
| Topic: | Recall Reason for MCR Manual Chloring Isolation on loss of Div 4 DC |
| RO: | 4.6 |
| SRO: | 4.6 |
| KA#: | 295004 2.4.49 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|--|---------------|---|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295004 2.4.49 4.6/4.4 | | |
| | KA Statement | Partial or Complete Loss of D.C. Power Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | | |
| | Cognitive level | lower | | |
| | Safety Function | | | |
| | 10 CFR 55 | 41.10 | | |
| | Technical Reference with Revision No: | LGSOPS0078 | Rev #: | 3 |
| | Justification for Non SRO CFR Link: | N/A | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 560683 | | |
| | Question Source: (i.e. New, Bank, Modified) | Bank 560683 | | |
| | Low KA Justification (if required): | N/A | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 560683 | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |
| 560683 | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

58

ID: 1455234

Points: 1.00

Unit 1 is operating at 100% power

- Service air is connected to the 1A instrument air header
- INSTRUMENT AIR HEADER A PRESSURE LO annunciator is in alarm
- INSTRUMENT AIR HEADER B PRESSURE LO annunciator is in alarm
- PV-015-167 Service Air Header Pressure Control Valve has isolated
- Service air header pressure has equalized with 1A instrument air header

Which of the following describes the A and B air header pressures that caused PV-015-167 Service Air Header Pressure Control Valve to isolate and how the Service Air Compressor is loaded?

| | 1A and 1B instrument air header pressures | Service air compressor loading |
|----|---|--------------------------------|
| A. | Both headers < 70 psig | Only the Lead side loaded |
| B. | At least one header is < 70 psig | Lead and Lag sides loaded |
| C. | At least one header is < 70 psig | Only the Lead side loaded |
| D. | Both headers < 70 psig | Lead and Lag sides loaded |

Answer: D

Answer Explanation

Both air headers low pressure alarm (85psig)
PV-05-167 closes when both headers are < 70 psig.
Service air com lead side load at 97 psig lag at 94

The instrument air headers at LGS are 2 separate headers with check valves to maintain separation, however a leak at a component or at a panel where several lines come together after the check valve will cause both headers to depressurize. Also, these headers run in close proximity to each other so any mechanical accident that damages one may also damage the other. per the stem PV-015-167 Service Air Header Pressure Control Valve has isolated. this requires both headers to be less than 70 psig. When PV-015-167 isolates it separates the service air compressor from the service air loads and allows the service air compressor to supply the instrument air header. The air compressors are able to compress on both the piston up and down stroke, normally the only compress on one side, if air header pressure drop below a setpoint (94psig for service air) then the compressor will load on both up and down stroke.

A is incorrect plausible to the examinee who does not recall the loading sequence of the service air compressor

B is incorrect plausible to the examinee who does not recall the requirement for BOTH air headers to be <70 psig for the PV-05-167 to close

C incorrect but plausible for the reasons stated above

D correct

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 58 Info | |
|--------------------------|------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 3.00 |
| System ID: | 1455234 |
| User-Defined ID: | Q# 58 NEW |
| Lesson Plan Objective: | LOT-1550 ON-119 OBJ 3 |
| Topic: | backup to ins airf air |
| RO: | 3.3 |
| SRO: | 3.4 |
| KA#: | 295019 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|---|---|--|--------|----|
| Comments: | General Data | | | |
| | | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295019 AK3.01 3.3/3.4 | | |
| | KA Statement | Partial or Complete Loss of Instrument Air Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR : Backup air system supply: Plant-Specific | | |
| | Cognitive level | Higher | | |
| | Safety Function | 8 | | |
| | 10 CFR 55 | 41.5 | | |
| | Technical Reference with Revision No: | M-0015 sht 4 | Rev #: | 40 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

59

ID: 1455127

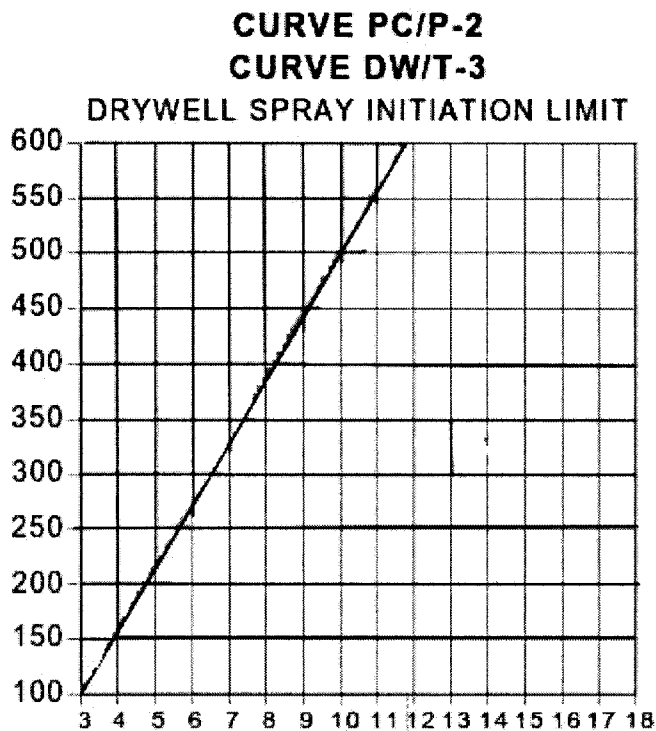
Points: 1.00

Plant conditions are as follows:

- Reactor pressure is 450 psig
- Drywell pressure is 8 psig
- Drywell temperature is 275 degrees

Given the following graph

Which of the following identifies whether the Drywell conditions are Safe or Unsafe and what the safe side of the graph is protecting from?



- | | Safe / Unsafe | Remaining on safe side protects from |
|----|---------------|--------------------------------------|
| A. | Unsafe | Containment Failure |
| B. | Unsafe | Level instrument inaccuracy |
| C. | Safe | Containment failure |
| D. | Safe | Level instrument inaccuracy |

Answer: C

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer Explanation

Examinee must calculate that Drywell temperature and Pressure combination given are below the safe/unsafe line on the graph. Then the candidate must determine that below line is safe. the examinee must then determine that the graph in question is the DW spray initiation limit and not the reference leg saturation limit curve and what the reason for these curves are

- A Incorrect plausible to examinee who does not recall safe side of graph
- B Incorrect plausible to examinee who does not recall safe side of graph and confuses this graph with the ref leg saturation curve
- C Correct safe side of graph is below the line and remaining on safe side protects against containment failure
- D Incorrect plausible to examinee who confuses this graph with the ref leg saturation curve

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 59 Info | |
|--------------------------|--------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 3.00 |
| System ID: | 1455127 |
| User-Defined ID: | Q# 59 NEW |
| Lesson Plan Objective: | LGSOPS1560.04 |
| Topic: | DW temp pressure effects |
| RO: | 3.3 |
| SRO: | 3.5 |
| KA#: | 295012 AK1.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|--|--------|--------|
| Level | RO | | |
| Tier | 1 | | |
| Group | 2 | | |
| KA # and Rating | 295012 AK1.01 3.3/3.5 | | |
| KA Statement | High Drywell Temperature Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL TEMPERATURE : Pressure/temperature relationship | | |
| Cognitive level | higher | | |
| Safety Function | 5 | | |
| 10 CFR 55 | 41.9, 41.10 | | |
| Technical Reference with Revision No: | T-102 bases | Rev #: | 2 5 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| Question Source: (i.e. New, Bank, Modified) | new | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

60

ID: 1588533

Points: 1.00

Unit 2 is operating at 50 percent power.

A Reactor Recirc Pump trips.

Which of the following is correct regarding the initial indicated reactor level response, and the major reason for the reactor power reduction from the pump trip?

| | <u>Indicated level response</u> | <u>Reason for power reduction</u> |
|----|---------------------------------|-----------------------------------|
| A. | Rises | Change in void content |
| B. | Rises | Change in moderator temperature |
| C. | Lowers | Change in void content |
| D. | Lowers | Change in moderator temperature |

Answer: A

Answer Explanation

- | | |
|---|---|
| A | A correct indicated level will rise. Due to increased void production in the core flow from the downcomer to the core will reduce causing level in the downcomer to rise. the void coefficient will be the major factor in the power change |
| B | Incorrect plausible to the examinee who believes reduced recirc flow will cause feedwater temperature to rise |
| C | Incorrect plausible to the examinee who does not recall that indicated level is read in the down comer not inside the shroud |
| D | Incorrect plausible to the examinee who does not recall that indicated level is read in the down comer not inside the shroud and believes reduced recirc flow will cause feedwater temperature to rise |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 60 Info | |
|--------------------------|------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1588533 |
| User-Defined ID: | Q# 60 MODIFIED |
| Lesson Plan Objective: | LGSOPS0 43A |
| Topic: | RR pp trip void effect |
| RO: | 3.2 |
| SRO: | 3.2 |
| KA#: | 295014 AK2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| <<General Data | | | |
|---|---|--------|--|
| Level | RO | | |
| Tier | 1 | | |
| Group | 2 | | |
| KA # and Rating | 295014 AK2.04 3.2/3.3 | | |
| KA Statement | Inadvertent Reactivity Addition Knowledge of the interrelations between INADVERTENT REACTIVITY ADDITION and the following: Void concentration | | |
| Cognitive level | higher | | |
| Safety Function | 1 | | |
| 10 CFR 55 | 41.7 | | |
| Technical Reference with Revision No: | OT-11 0 | Rev #: | |
| Justification for Non SRO CFR Link: | na | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | seusquehanna Q 46 2013 exam modified | | |
| Question Source: (i.e. New, Bank, Modified) | seusquehanna Q 46 2013 exam modified | | |
| Low KA Justification (if required): | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | seusquehanna Q 46 2013 exam modified | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

61

ID: 1601489

Points: 1.00

Unit 1 has experienced a core damage event with elevated Off-site release rates. For the CREFAS system, which correctly completes the statement below?

CREFAS will automatically isolate if the outside air intake measures greater than (1) to ensure control room personnel do NOT receive more than (2) for the duration of the accident.

| | (1) | (2) |
|----|------------------------------------|--------------------|
| A. | 0.5 mR/hr | 5 REM TEDE |
| B. | 0.5 mR/hr | 25 REM CDE Thyroid |
| C. | $1 \times 10^{-5} \mu\text{Ci/cc}$ | 5 REM TEDE |
| D. | $1 \times 10^{-5} \mu\text{Ci/cc}$ | 25 REM CDE Thyroid |

Answer: C

Answer Explanation

The isolation set point for Main Control Room Normal Fresh Air Supply Radiation Monitor is 1×10^{-5} micro curies/cc (Tech Spec Table 3.3.7.1-1)

The purpose of the CREFAS Radiation isolation is to limit the Control Room radiation exposure to personnel to 5 REM TEDE or less. Tech Spec Bases page B3/4 7-1a.

- A Wrong - Plausible to the student that mistakenly recalls the CREFAS CL2 isolation setpoint of 0.5 PPM in place of the Radiation isolation set point
- B Wrong - Plausible to the student that mistakenly recalls the CREFAS CL2 isolation setpoint of 0.5 PPM in place of the Radiation isolation set point and plausible to the student that remembers that all Radiological Effluent Thyroid limits are 5X above the TEDE limits found in the EALs and selects the Thyroid Limit that would be 5X larger than the correct 5 REM TEDE limit
- C Correct for the above reasons
- D Wrong - Plausible to the student that remembers that all Radiological Effluent Thyroid limits are 5X above the TEDE limits found in the EALs and selects the Thyroid Limit that would be 5X larger than the correct 5 REM TEDE limit

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | |
|--------------------------|---|
| Question 61 Info | |
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| | |
| System ID: | 1601489 |
| User-Defined ID: | Q# 61 NEW |
| Lesson Plan Objective: | LGSOPS0078.11 |
| | |
| Topic: | Off-site Release Rate - Response of plant ventilation |
| RO: | 3.3 |
| SRO: | 3.5 |
| KA#: | APE 295017 AK3.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|-----------|---|
| Level | RO | | |
| Tier | 1 | | |
| Group | 2 | | |
| KA # and Rating | 295017 AK3.02 RO 3.3 SRO 3.5 | | |
| KA Statement | APE: 295017 High Off-Site Release Rate AK3. Knowledge of the reasons for the following responses as they apply to HIGH OFF-SITE RELEASE RATE : AK3.02 Plant ventilation. | | |
| Cognitive level | Low | | |
| Safety Function | 9 Radioactivity Release | | |
| 10 CFR 55 | 41.5 | | |
| Technical Reference with Revision No: | EP-AA-1008 Addendum 3 Unit 1 Tech Specs Table 3.3.7.1-1 | Rev #: | 2 |
| Justification for Non SRO CFR Link: | N/A | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | |
| Question Source: (i.e. New, Bank, Modified) | New | | |
| Low KA Justification (if required): | N/A | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | Yes | | |
| LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

62

ID: 1588469

Points: 1.00

Unit 1 is operating at 40% power, with the following:

- The '1A' RPV Narrow Range (NR) Level Transmitter that inputs to the 'A' NR level indicator on 10C603 is failed upscale

Five minutes later, the following occurs:

- The '1B' RPV Narrow Range (NR) Level Transmitter that inputs to the 'B' NR level indicator on 10C603 fails upscale

WHICH ONE of the following describes the plant response (assume no operator action)?

- A. Reactor scrams due to a loss of Feedwater
- B. Reactor scrams due to a Main Turbine trip; RFPs ARE available after the scram
- C. Reactor remains operating
- D. Reactor scrams due to a Main Turbine trip; RFPs are NOT available after the scram

Answer: C

Answer Explanation

The 4 RPV LTs that input to DFWLC for the high level turbine trip logic are setup different than RPS trip logic. The DFWLC trip logic is A or B and C or D. RPS trip logic is A or C and B or D. With A and B level transmitters for DFWLC failing upscale, the main turbine and RFPT will not trip on high level. additionally these transmitters are different than the RPS level transmitters

'C' is correct for the above reasons. **Reactor remains operating**

'A' is wrong. **Reactor scrams due to a loss of Feedwater** Plausible to the examinee who does not recall the LT coincidence needed to produce the turbine trip function.

'B' is wrong. **Reactor scrams due to a Main Turbine trip; RFPs are available after the scram** Plausible to the examinee who not only incorrectly concludes several points: 1) that these two LTs work together to produce the needed turbine trip logic; and 2) that the RFPTs are available, post-scram (i.e., that the RFPTs will not have tripped on the LT failures).

'D' is wrong. **Reactor scrams due to a Main Turbine trip; RFPs are not available after the scram** Plausible for reasons similar to choices 'B' and 'C'.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 62 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.50 |
| System ID: | 1588469 |
| User-Defined ID: | Q# 62 BANK |
| Lesson Plan Objective: | LLOT0540.14D |
| Topic: | Plant Response to RPV LT Upscale Failures |
| RO: | 3.5 |
| SRO: | 3.5 |
| KA#: | 295008 AA1.08 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------|---|---|--------|--------|
| Comments: | | | | |
| | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 2 | | |
| | KA # and Rating | 295008 AA1.08 3.5/3.5 | | |
| | KA Statement | High Reactor Water Level Ability to operate and/or monitor the following as they apply to HIGH REACTOR WATER LEVEL : Feedwater system | | |
| | Cognitive level | lower | | |
| | Safety Function | 2 | | |
| | 10 CFR 55 | 41.7 | | |
| | Technical Reference with Revision No: | M-0042 sheet 2 | Rev #: | 3 4 |
| | Justification for Non SRO CFR Link: | N/A | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 908160 | | |
| | Question Source: (i.e. New, Bank, Modified) | bank 908160 | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 908160 | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| | Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

63

ID: 1601450

Points: 1.00

Unit 2 plant conditions are as follows:

- Reactor power is 37%
- Both CRD pumps are tripped and cannot be started

15 minutes later, 23 HCU Accumulator Trouble annunciators are alarming

A GP-4 Shutdown is performed

WHICH ONE of the following describes the plant response?

- A. 23 rods will not insert
- B. All rods will insert with normal scram times
- C. All rods will insert with scram times greater than the Tech Spec allowable scram times for all rods
- D. All rods will insert with scram times greater than the Tech Spec allowable scram times for 23 rods

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer: All rods will insert with normal scram times

Per ON-107, During a reactor scram, the charging header provides the initial motive force to insert the rod. Then the scram accumulator pressure accelerates the drive and reactor pressure is used in the rod insertion process but is not required. For example, a rod scrammed at 900 psig reactor pressure and zero accumulator nitrogen pressure would result in an insignificant increase in scram time. Twenty minutes is allowed to restore a tripped CRD pump if more than 1 scram accumulator is inoperable and reactor pressure is equal to or greater than 900 psig since reactor pressure is adequate to insert all control rods with or without inoperative scram accumulators. When this condition occurs below 900 psig reactor pressure, the mode switch is to be placed in shutdown as required by Technical Specifications. The insertion and disarming of control rods when more than one accumulator is inoperable is performed to comply with Technical Specifications.

Distractors:

23 rods will not insert – all rods will insert

All rods will insert with significant longer scram times – all rods will insert, scram times will not significantly increase

All rods will insert, however, 23 rods will have significant longer scram times – see explanation

Examinee must recognize at 37% power reactor is at rated pressure

- A Wrong - Plausible if the student mis-applies the extremely reduced reactor pressure impact on the control rod scram ability to the 23 Control Rods with reduced Scram Accumulator Pressures (i.e. - at extremely reduced RPV pressure CRD differential pressure is insufficient to insert the control rod.)
- B Correct - as described above
- C Wrong - Plausible if the student mis-applies the reduced reactor pressure impact on the control rod scram ability to all core Control Rods (i.e. - at reduced RPV pressure rod scram times will be lengthened commensurate with the reduction in RPV pressure)
- D Wrong - Plausible if the student mis-applies the reduced reactor pressure impact on the control rod scram ability to the 23 Control Rods with reduced Scram Accumulator Pressures (i.e. - at reduced RPV pressure rod scram times will be lengthened commensurate with the reduction in RPV pressure)

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 63 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.50 |
| System ID: | 1601450 |
| User-Defined ID: | Q #63 - BANK |
| Lesson Plan Objective: | LGSOPS1550.2 |
| Topic: | ON-107, Both CRD pumps are tripped and cannot be started and 23 HCU Accumulators |
| RO: | 3.3 |
| SRO: | 3.4 |
| KA#: | 295022 AA2.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|--|--------|-----|
| Level | RO | | |
| Tier | 1 | | |
| Group | 2 | | |
| KA # and Rating | 295022 AA2.02 RO 3.3 SRO 3.4 | | |
| KA Statement | APE: 295022 Loss of CRD Pumps AA2. Ability to determine and/or interpret the following as they apply to LOSS OF CRD PUMPS : AA2.02 CRD system status | | |
| Cognitive level | Low | | |
| Safety Function | 1 - Reactivity Control | | |
| 10 CFR 55 | 41.10 | | |
| Technical Reference with Revision No: | ON-107 | Rev #: | 1 8 |
| Justification for Non SRO CFR Link: | N/A | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | | | |
| Question Source: (i.e. New, Bank, Modified) | Bank | | |
| Low KA Justification (if required): | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

64

ID: 1442869

Points: 1.00

Unit 1 is operating at 100% power with the following conditions;

SJAE DISCH TO RECOMBINER LO FLOW annunciator alarms

Which of the following identifies where this parameter can be monitored and what is an expected Steam Jet Air Ejector (SJAE) response if actual flow is 9100 Lbm/hr ?

| | <u>Location to monitor parameter</u> | <u>SJAE response</u> |
|----|--------------------------------------|---|
| A. | 10C-652 Condenser panel | First Stage Air Ejector "AIR" valves will close |
| B. | 10C-652 Condenser panel | Second Stage Air Ejector "STEAM" valve will close |
| C. | 10C-673 OFF GAS panel | First Stage Air Ejector "AIR" valves will close |
| D. | 10C-673 OFF GAS panel | Second Stage Air Ejector "STEAM" valve will close |

Answer: C

Answer Explanation

- | | |
|---|---|
| A | Incorrect plausible to examinee who recalls that SJAE valves control stations and SJAE 2nd stage suction and discharge pressure indication are on 10C-652 and incorrectly believes that SJAE steam flow is also here |
| B | Incorrect plausible to examinee who recalls that SJAE valves control stations and SJAE 2nd stage suction and discharge pressure indication are on 10C-652 and incorrectly believes that SJAE steam flow is also here and incorrectly recalls which valve closes on low flow |
| C | Correct SJAE air and steam flow recorder FR-69-115 is located on 10C-673 and 1st stage air valves will close causing a loss of condenser vacuum |
| D | incorrect plausible to examinee who does not recall which SJAE valves close on low flow |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 64 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1442869 |
| User-Defined ID: | Q# 64 NEW |
| Lesson Plan Objective: | LGSOPS0069.7A |
| Topic: | Low vac |
| RO: | 4.6 |
| SRO: | 4.3 |
| KA#: | 295002 2.1.31 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|--------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 2 | | |
| | KA # and Rating | 295002 2.1.31 4.6/4.3 | | |
| | KA Statement | Loss of Main Condenser Vacuum 2.1.31 Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup. | | |
| | Cognitive level | higher | | |
| | Safety Function | 3 | | |
| | 10 CFR 55 | 41.10 | | |
| | Technical Reference with Revision No: | OT-116 | Rev #: | 3 8 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

65

ID: 1588470

Points: 1.00

Initial Unit 2 plant conditions are as follows:

- Reactor power is 100%
- A group VIIIA isolation occurred due to a blown fuse
- The fuse has been replaced
- Instrument Air is backing up Instrument Gas through SV-059-228B
- Drywell pressure is 1.0 psig DOWN SLOW
- Drywell venting is in progress through HV-057-211 and HV-057-217
- Primary Containment Oxygen concentration is 3.5% UP SLOW

No other Operator actions are taken and Drywell pressure stabilizes at 0.8 psig and then begins to rise slowly.

The Containment Leak Detector is reading 88 cpm and steady.

WHICH ONE of the following describes the required actions for these conditions?

- A. Isolate instrument air to instrument gas and restart instrument gas
- B. Secure venting the Drywell per OT-101, High Drywell Pressure
- C. Raise rate of venting per OT-101, High Drywell Pressure
- D. Begin inerting the Drywell per T-228, Inerting/Purging Primary Containment

Answer: A

Answer Explanation

A Correct, rising DW pressure with rising DW O2 and instrument air backing up instrument gas is indicative of a leak in the instrument gas system. Isolating instrument air to gas is directed by OT-101 since the VIIIA isolation can be reset instrument gas should be restarted per OT-101

B Incorrect, secure venting is required if DW rad level is rising along with DW pressure plausible to

C Incorrect raising vent rate cannot be done since both valves are fully open. plausible to examinee who confuses venting with purging.

D Incorrect inerting is directed from T-102 no entry for T-102 exists

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 65 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1588470 |
| User-Defined ID: | Q# 65 MODIFIED |
| Lesson Plan Objective: | LLOT2006.1 |
| Topic: | OT-101, Drywell venting is in progress due to high drywell pressure |
| RO: | 3.8 |
| SRO: | 3.9 |
| KA#: | 295010 AA2.02 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|--|-------------------|--------|
| Comments: | General Data | | | |
| | Level | RO | | |
| | Tier | 1 | | |
| | Group | 2 | | |
| | KA # and Rating | 295010 AA2.02 3.8/3.9 | | |
| | KA Statement | High Drywell Pressure Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE : Drywell pressure | | |
| | Cognitive level | Higher | | |
| | Safety Function | 5 | | |
| | 10 CFR 55 | 41.10 | | |
| | Technical Reference with Revision No: | OT-101 | Rev #: | 3 7 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | 562341 modified | | |
| | Question Source: (i.e. New, Bank, Modified) | 562341 modified | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 562341 modified | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

66

ID: 1682357

Points: 1.00

Consider the requirements of:

- OP-AA-108-103, Locked Equipment Program

The PRO is directing the restoration of a locked, manual throttle valve to a position of "5 turns OPEN".

WHICH ONE of the following describes the minimum verification(s) required for restoring this valve?

- A. Requires a Peer Check, ONLY
- B. Requires Concurrent Verification, ONLY
- C. Requires an Independent Verification, ONLY
- D. Requires a Peer Check AND an Independent Verification

Answer: B

Answer Explanation

B is correct Per OP-AA-108-103, section 4.2.2...Concurrent Verification is required.

A incorrect peer check is not used in the Locked Equipment Program

C incorrect plausible to the examinee who recalls that general independent verification is a more stringent, but neglects the fact that the IV would have to unlock and reposition the valve, thus defeating the second verification.

D incorrect for the reasons stated above

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 66 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|---|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|-----|--|--|-----------------|----------------------|--|--|--------------|--|--|--|-----------------|-----|--|--|-----------------|-----|--|--|-----------|-------|--|--|---------------------------------------|---------------|--------|---|-------------------------------------|-----|--|--|--|------|--|--|---|------|--|--|-------------------------------------|-----|--|--|---|--|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1682357 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 66 BANK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS2005A.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | Recall Controls for Restoring a Locked Manual Throttle Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.2.14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3">N/A</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.1.8 RO 3.4 SRO 4.1</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">2.1.8 Ability to coordinate personnel activities outside the control room.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">Low</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">N/A</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>OP-AA-108-103</td> <td>Rev #:</td> <td>2</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">N/A</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">bank</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">bank</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">N/A</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3"></td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">None</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 3 | | | Group | N/A | | | KA # and Rating | 2.1.8 RO 3.4 SRO 4.1 | | | KA Statement | 2.1.8 Ability to coordinate personnel activities outside the control room. | | | Cognitive level | Low | | | Safety Function | N/A | | | 10 CFR 55 | 41.10 | | | Technical Reference with Revision No: | OP-AA-108-103 | Rev #: | 2 | Justification for Non SRO CFR Link: | N/A | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank | | | Question Source: (i.e. New, Bank, Modified) | bank | | | Low KA Justification (if required): | N/A | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | None | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.1.8 RO 3.4 SRO 4.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | 2.1.8 Ability to coordinate personnel activities outside the control room. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | Low | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | OP-AA-108-103 | Rev #: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

67

ID: 1682350

Points: 1.00

The 1A RHR Pump had been operating for 40 minutes in the full-flow test mode when it was manually secured. As soon as it was secured, it was realized that the 1A RHR Pump needed to be restarted for testing.

Which of the following describes the minimum wait time before restarting the 1A RHR Pump?

- A. No wait time is required.
- B. Must wait 15 minutes prior to restarting the pump.
- C. Must wait 30 minutes prior to restarting the pump.
- D. Must wait 60 minutes prior to restarting the pump.

Answer: A

Answer Explanation

- A is correct - per S51.8K

3.10 For normal operations:

Pumps may only be started once an hour at rated temperature

OR twice an hour at ambient temperature. Subsequent starts require a 30 minute run time at full speed

OR 60 minute idle time.

Since the motor has been running for 40 minutes, it can be started and brought up to operating speed one time with no waiting time required.

A is correct

B is incorrect but plausible if the examinee believes there is a 15 minute wait period requirement before restarting the Pump.

C is incorrect but plausible if the examinee believes there is a 30 minute wait period requirement before restarting the Pump.

D is incorrect but plausible if the examinee believes there is a 60 minute wait period requirement before restarting the Pump.

The precaution above applies to all large motors > 2.3 Kv and is not system specific

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 67 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 0 |
| Difficulty: | 0.00 |
| System ID: | 1682350 |
| User-Defined ID: | Q 67 BANK |
| Lesson Plan Objective: | |
| Topic: | The1A RHR Pump had been operating for 40 minutes in the full-flow test m |
| RO: | 3.8 |
| SRO: | |
| KA#: | 2.1.32 |

ILT 15-01 January 2017 NRC test SRO

17 January 2017

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

68

ID: 1588537

Points: 1.00

An operator must perform stroke time testing of a valve required by Technical Specifications for post-maintenance testing to restore operability. The valve is motor operated with seal-in control logic and a spring return to center control switch.

To time the valve open, the operator must turn the control switch to the desired position (1) and must start the stopwatch when the (2).

- A. (1) momentarily
(2) red position indication light FIRST illuminates
- B. (1) momentarily
(2) control Switch is placed to OPEN
- C. (1) for a count of three (3)
(2) red position indication light FIRST illuminates
- D. (1) for a count of three (3)
(2) control Switch is placed to OPEN

Answer: D

Answer Explanation

From ST-6-107-200-0 IST VALVE STROKE SURVEILLANCE LOG step 3.3:

3.3 Stroke time is defined as the time from the initiation of the actuation signal until full closed indication
OR full open indication is observed.

And OP-AA-103-105, LIMITORQUE MOTOR-OPERATED AND CHAINWHEEL OPERATED VALVE OPERATIONS step 4.2.2.3:

3. When remotely operating a MOV with seal-in control logic and a spring return to center control switch, the control switch must be turned to the desired position and held for a count of three (3) to ensure there is adequate time for the seal-in contacts to make-up.

- A Wrong - plausible to the student who fails to recall that the control switch must be held for a count of 3 to ensure adequate time for the seal-in contacts to make-up and to the student who mistakenly believes that the stopwatch is started when the red (open) position indication light first illuminates.
- B Wrong - plausible to the student who fails to recall that the control switch must be held for a count of 3 to ensure adequate time for the seal-in contacts to make-up
- C Wrong - plausible to the student who mistakenly believes that the stopwatch is started when the red (open) position indication light first illuminates.
- D Correct for the above reasons

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 68 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|--------|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|-----|--|--|-----------------|---------------|--|--|--------------|--|--|--|-----------------|-------|--|--|-----------------|-----|--|--|-----------|-------|--|--|---------------------------------------|-------------------------------------|--------|--------|-------------------------------------|-----|--|--|--|--|--|--|---|--|--|--|-------------------------------------|-----|--|--|---|--|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1588537 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 68 - MODIFIED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS2010 27.C-CONDUCT OF OPS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | Valve Stroke - Post Maintenance Testing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 2.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.2.21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3">N/A</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.2.21 RO 2.9</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Knowledge of pre- and post-maintenance operability requirements.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">lower</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">N/A</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>OP-AA-103-105 OP-LG-108-101-1004</td> <td>Rev #:</td> <td>5 7</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">N/A</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">Modified from Clinton ILT 14-1 Exam #69. (Vision ID 1097944)</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">Modified from Clinton ILT 14-1 Exam #69. (Vision ID 1097944)</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">N/A</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">Created new first half of question to replace when to stop the stopwatch</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">None</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 3 | | | Group | N/A | | | KA # and Rating | 2.2.21 RO 2.9 | | | KA Statement | Knowledge of pre- and post-maintenance operability requirements. | | | Cognitive level | lower | | | Safety Function | N/A | | | 10 CFR 55 | 41.10 | | | Technical Reference with Revision No: | OP-AA-103-105 OP-LG-108-101-1004 | Rev #: | 5 7 | Justification for Non SRO CFR Link: | N/A | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Modified from Clinton ILT 14-1 Exam #69. (Vision ID 1097944) | | | Question Source: (i.e. New, Bank, Modified) | Modified from Clinton ILT 14-1 Exam #69. (Vision ID 1097944) | | | Low KA Justification (if required): | N/A | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Created new first half of question to replace when to stop the stopwatch | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | None | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.2.21 RO 2.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Knowledge of pre- and post-maintenance operability requirements. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | lower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | OP-AA-103-105 OP-LG-108-101-1004 | Rev #: | 5 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | Modified from Clinton ILT 14-1 Exam #69. (Vision ID 1097944) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | Modified from Clinton ILT 14-1 Exam #69. (Vision ID 1097944) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Created new first half of question to replace when to stop the stopwatch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

69

ID: 1574760

Points: 1.00

Both Units are operating at 100% power.

Maintenance has been performed on several air lock door seals.

The following Post Maintenance Testing was performed with the resultant established SGTS flow rates at -.25 inches of water.

| <u>Test</u> | <u>SGTS flow rate</u> |
|--|-----------------------|
| ST-6-076-310-1 SGTS REACTOR ENCLOSURE SECONDARY CONTAINMENT INTEGRITY TEST | 2,250 CFM |
| ST-6-076-310-0 SGTS REFUEL AREA SECONDARY CONTAINMENT INTEGRITY TEST | 820 CFM |

Which of the following identifies the status of the Unit 1 Reactor Enclosure and Refueling Area Secondary Containment for the above conditions?

| <u>Unit 1 Reactor Enclosure Secondary Containment</u> | <u>Refueling Area Secondary Containment</u> |
|---|---|
| A. OPERABLE | OPERABLE |
| B. OPERABLE | INOPERABLE |
| C. INOPERABLE | OPERABLE |
| D. INOPERABLE | INOPERABLE |

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

The Maintenance of Secondary Containment door seals impacts the operability of the Secondary Containment. From the Stem the student identifies that a "Drawdown test" was performed on the Refuel Floor and the Unit 1 Secondary Containment. For the Reactor Enclosure the resultant flow of 2,250 CFM is within the surveillance requirement of 4.6.5.1.1.c.2 (Less than or equal to 2,500 CFM). For the Refueling Area Secondary Containment the resultant flow of 820 CFM is NOT within the surveillance requirement of 4.6.5.1.2. (Less than or equal to 764 CFM). Based on the above information the Unit 1 Reactor Enclosure Secondary Containment is OPERABLE and the Refueling Floor Secondary Containment is INOPERABLE.

These secondary containment SBTG flow rates are ON-111 symptoms for a loss of secondary containment and as such RO must know knowledge

- A Wrong - Plausible if the student recalls the incorrect Surveillance acceptance criteria for the Refueling Area Secondary Containment
- B Correct as described above
- C Wrong - Plausible if the student recalls the incorrect Surveillance acceptance criteria for the Refueling Area Secondary Containment and the Reactor Enclosure Secondary Containment
- D Wrong - Plausible if the student recalls the incorrect Surveillance acceptance criteria for the Reactor Enclosure Secondary Containment

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 69 Info | |
|--------------------------|-----------------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 2.00 |
| System ID: | 1574760 |
| User-Defined ID: | Q# 69 NEW |
| Lesson Plan Objective: | LGSOPS0076B.9 |
| Topic: | Secondary Containment Operability |
| RO: | 3.2 |
| SRO: | 3.8 |
| KA#: | G2.2.36 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | | |
|-----------------|--|--|---|---------------|------------------|
| Comments: | General Data | | | | |
| | Level | | RO | | |
| | Tier | | 3 | | |
| | Group | | N/A | | |
| | KA # and Rating | | 2.2.36 RO 3.1 SRO 4.2 | | |
| | KA Statement | | Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations. | | |
| | Cognitive level | | low | | |
| | Safety Function | | N/A | | |
| | 10 CFR 55 | | 41.10 | | |
| | Technical Reference with Revision No: | | Tech Spec 3.6.5.2.1 Tech Spec 3.6.5.2.2 ST-6-076-310-0 ST-6-076-310-1 | Rev #: | 2 3 1 7 |
| | Justification for Non SRO CFR Link: | | N/A | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | | New | | |
| | Question Source: (i.e. New, Bank, Modified) | | New | | |
| | Low KA Justification (if required): | | N/A | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | | |
| | ILT | | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | | None | | |
| | LORT | | | | |
| | PRA: (i.e. Yes or No or #) | | | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

70

ID: 1455760

Points: 1.00

You have been authorized and briefed to do work in the RCA, the work area has no physical barrier (e.g., door); instead, its entrance has a barricade and flashing red light.

Per RP-AA-460:

WHICH one of the following identifies the posted radiation dose rate in this area?

- A. Greater than 30 mR/hr at 30 cm
- B. Greater than or equal to 100 mR/hr at 1 meter
- C. Greater than or equal to 800 mR/hr at 30 cm; less than 500 Rad/hr at 1 meter
- D. Greater than or equal to 500 mR/hr at 30 cm; less than 800 Rad/hr at 1 meter

Answer: C

Answer Explanation

Per RP-AA-460, section 4.4.2.1.b.2 NOTE...a **barricade and flashing red light can be used (in lieu of a physical barrier) only for a LHRA**. Per section 4.4, the **posted radiation dose rate (considering the more-conservative Exelon admin limit) for an LHRA is "greater than or equal to 800 mR/hr at 30 cm; less than 500 Rad/hr at 1 meter."**

A Incorrect Plausible to the examinee who recalls 80 Mr insted of 800

B incorect Plausible to the examinee who does not recall the 1 meter limit

C correct the posted radiation dose rate (considering the more-conservative Exelon admin limit) for an LHRA is "greater than or equal to 800 mR/hr at 30 cm; less than 500 Rad/hr at 1 meter."

D incorrect plausible to the examinee who reverses the 1 meter rad requirement

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 70 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455760 |
| User-Defined ID: | Q# 70 BANK |
| Lesson Plan Objective: | LLOT1760.10 |
| Topic: | Identify activities requiring drywell upper elevation access controls |
| RO: | 3.4 |
| SRO: | 3.8 |
| KA#: | 2.3.13 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|----------------------|
| Comments: | General Data | | |
| | Level | RO | |
| | Tier | 3 | |
| | Group | | |
| | KA # and Rating | 2.3.13 3.4/3.8 | |
| | KA Statement | Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc. | |
| | Cognitive level | lower | |
| | Safety Function | | |
| | 10 CFR 55 | 41.12 | |
| | Technical Reference with Revision No: | RP-AA-460 | Rev #: 2 9 |
| | Justification for Non SRO CFR Link: | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | 986547 bank | |
| | Question Source: (i.e. New, Bank, Modified) | 986547 bank | |
| | Low KA Justification (if required): | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 986547 bank | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

71

ID: 1455767

Points: 1.00

An EO is required to enter an area in the Main Condenser Bay:

- General area radiation level is 3 Rem/hr

The EO's radiation history:

- 1760 mRem cumulative exposure for the current year (TEDE)
- 19 Rem lifetime exposure to this date (TEDE)
- NRC Form 4 completed and on file
- No dose extensions have been obtained

The work activity will take 45 minutes to complete.

Regarding the following radiation exposure limits, which one of the answer choices identifies the limit(s), if any, that will be exceeded?

1. Administrative Dose Control Level
2. NRC Exposure Limit
3. Emergency Exposure Limit

- A. None
- B. Limit #1 **ONLY**
- C. Limits #1 and #2 **ONLY**
- D. Limits #1, #2 AND #3

Answer: B

Answer Explanation

Calculating the EO's expected dose for this 45-minute activity:

$$\begin{aligned} 3 \text{ Rem} &= 3000 \text{ mRem} \\ 3000 \text{ mRem} \times .75 &= 2250 \text{ mRem} \end{aligned}$$

Added to his current dose:

$$2250 \text{ mRem} + 1760 \text{ mRem} = 4010 \text{ mRem TEDE}$$

4010 mRem **exceeds the** 2000 mRem TEDE **Admin Dose Control Level** of RP-AA-203, section 4.1.2.

4010 mRem does NOT exceed the 5000 mRem NRC Exposure Limit of section 4.1.1, Table 1.

Not does the 4010 mRem (4.01 Rem) exceed the 10,000 mRem (10 rem)...for protecting station property...Emergency Exposure Limit of section 4.5.3, Table 2.

ANSWER: Admin Dose Control Level, only

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 71 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|---|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|--|--|--|-----------------|---------------|--|--|--------------|--|--|--|-----------------|--------|--|--|-----------------|--|--|--|-----------|-------|--|--|---------------------------------------|-----------|--------|---|-------------------------------------|-----|--|--|--|-------------|--|--|---|-------------|--|--|-------------------------------------|-----|--|--|---|-------------|--|--|-----|--|--|--|---|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455767 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 71 BANK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LLOT1760.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | Determine if any Dose Limits will be exceeded | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 3.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.3.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3"></td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.3.4 3.2/3.7</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Knowledge of radiation exposure limits under normal or emergency conditions.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">higher</td> </tr> <tr> <td>Safety Function</td> <td colspan="3"></td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.12</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>RP-AA-203</td> <td>Rev #:</td> <td>3</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">bank 591143</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">bank 591143</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">bank 591143</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-#)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 3 | | | Group | | | | KA # and Rating | 2.3.4 3.2/3.7 | | | KA Statement | Knowledge of radiation exposure limits under normal or emergency conditions. | | | Cognitive level | higher | | | Safety Function | | | | 10 CFR 55 | 41.12 | | | Technical Reference with Revision No: | RP-AA-203 | Rev #: | 3 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 591143 | | | Question Source: (i.e. New, Bank, Modified) | bank 591143 | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 591143 | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-#) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.3.4 3.2/3.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Knowledge of radiation exposure limits under normal or emergency conditions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | RP-AA-203 | Rev #: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 591143 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | bank 591143 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 591143 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-#) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

72

ID: 1649570

Points: 1.00

Plant conditions:

- Unit 1 is in OPCON 1
- Unit 2 is in OPCON 2 with GP-2, STARTUP in progress

A valid OBE EXCEEDED alarm is received and is confirmed by the U.S. Geological Survey.

WHICH ONE of the following is a required operator action?

- A. Manually scram both reactors
- B. Perform GP-4 Rapid Plant Shutdown on Unit 1
Manually scram Unit 2 reactor
- C. Perform GP-4 Rapid Plant Shutdown on both Units
- D. Perform GP-3 Normal Plant Shutdown on both Units

Answer: A

Answer Explanation

Per SE-5 (Earthquake), Steps 4.2 and 4.5. The "valid" comment in the stem translates to "evidence of the seismic event" (mentioned in Step 4.5). Though Step 4.5 is not an "Immediate Operator Action" initial license candidates are expected to recall manual scram/GP-4 Rapid Shutdown actions, no matter where they exist in procedure.

'A' is correct: Manually scram both reactors. Correct for the reasons described above.

'B' is wrong: Perform GP-4 Rapid Plant Shutdown on Unit 1; Manually scram Unit 2 reactor. Very plausible to the examinee who considers that, whenever practical, LGS procedures direct us to perform a GP-4 Rapid Plant Shutdown (i.e., running Recirc Pumps to minimum speed and transferring house loads to the startup buses before scrambling the reactor) in order to minimize the plant transient. The fact that Unit 2 is only in OPCON 2 during a startup, the idea of simply scrambling the reactor (i.e., without concern for the severity of a plant transient) makes this answer choice all the more distracting.

'C' is wrong: Perform GP-4 Rapid Plant Shutdown on both Units. Plausible for reasons similar to that for choice 'B'; except, here, the examinee considers it more prudent to minimize the plant transient for both Units. This examinee has neglected to consider that with Unit 2 in OPCON 2, its house loads are still on the startup buses and its Total Core Flow is well below 60% (i.e., the target flow for the reduction in Recirc directed by GP-4).

'D' is wrong: Perform GP-3 Normal Plant Shutdown on both Units. Plausible to the examinee who does not recognize the significance of an OBE earthquake and/or confuses it with an SSE earthquake. As such, the examinee is compelled to believe that an orderly plant shutdown of both Units is sufficient to mitigate the effects of the OBE.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 72 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|--------|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|--|--|--|-----------------|----------------|--|--|--------------|---|--|--|-----------------|-------|--|--|-----------------|--|--|--|-----------|-------|--|--|---------------------------------------|------|--------|--------|-------------------------------------|-----|--|--|--|-------------|--|--|---|-------------|--|--|-------------------------------------|-----|--|--|---|----------------------|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|------|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1649570 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 72 BANK 2015 NRC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS2000.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SE-5 - Recall Requirements for Manual Scram | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.4.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3"></td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.4.11 4.0/4.2</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Knowledge of abnormal condition procedures.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">lower</td> </tr> <tr> <td>Safety Function</td> <td colspan="3"></td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>SE-5</td> <td>Rev #:</td> <td>3 8</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">Bank 558648</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">Bank 558648</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">Bank 558648 2015 NRC</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3">none</td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 3 | | | Group | | | | KA # and Rating | 2.4.11 4.0/4.2 | | | KA Statement | Knowledge of abnormal condition procedures. | | | Cognitive level | lower | | | Safety Function | | | | 10 CFR 55 | 41.10 | | | Technical Reference with Revision No: | SE-5 | Rev #: | 3 8 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 558648 | | | Question Source: (i.e. New, Bank, Modified) | Bank 558648 | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 558648 2015 NRC | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | none | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.4.11 4.0/4.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Knowledge of abnormal condition procedures. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | lower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | SE-5 | Rev #: | 3 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 558648 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | Bank 558648 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | Bank 558648 2015 NRC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

73

ID: 1455732

Points: 1.00

The CRS has directed performance of T-260 REACTOR PRESSURE VESSEL DEPRESSURIZATION/VENTING on UNIT 2.

- The MSIV's are currently closed but are pneumatically functional
- The Main condenser is available
- Reactor pressure is 990 psig
- Main Steam Line pressure is 400 psig down slow

Step 4.1 RPV DEPRESSURIZATION/VENTING USING MAIN STEAM LINES is being performed

Given the following valves.

1. Bypass Leakage Barrier Block valves HV-41-242 and HV-41-243
2. Bypass Leakage Barrier Vent valves HV-41-240 and HV-41-241

From the above list, which valves, if required to be operated, will be operated by an equipment operator and where will the reactor steam be vented to?

| | <u>Actions performed by an Equipment Operator</u> | <u>Reactor Steam will be directed to</u> |
|----|---|--|
| A. | 2 ONLY | Main Condenser |
| B. | 1 ONLY | Reactor Enclosure |
| C. | 1 AND 2 | Main Condenser |
| D. | 1 AND 2 | Reactor Enclosure |

Answer: C

Answer Explanation

Although valves are operated locally reactor enclosure or AER room there are position indicating lights in the MCR.

Section 4.2 using steam line drain vents to reactor enclosure

- A Incorrect both 1 and 2 are remote actions
- B Incorrect both 1 and 2 are remote actions and steam is directed to the main condenser
- C Correct both actions are performed locally and steam is directed to the main condenser
- D Incorrect steam is directed to the main condenser

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 73 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|---|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|--|--|--|-----------------|----------------|--|--|--------------|--|--|--|-----------------|-----|--|--|-----------------|--|--|--|-----------|-------|--|--|---------------------------------------|------------|--------|---|-------------------------------------|-----|--|--|--|-----|--|--|---|-----|--|--|-------------------------------------|-----|--|--|---|-----|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455732 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 73 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS2003.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | EO actions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.4.35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3"></td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.4.35 3.8/4.0</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">low</td> </tr> <tr> <td>Safety Function</td> <td colspan="3"></td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>E-394 sht1</td> <td>Rev #:</td> <td>9</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">new</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">new</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">new</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 3 | | | Group | | | | KA # and Rating | 2.4.35 3.8/4.0 | | | KA Statement | Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects. | | | Cognitive level | low | | | Safety Function | | | | 10 CFR 55 | 41.10 | | | Technical Reference with Revision No: | E-394 sht1 | Rev #: | 9 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | Question Source: (i.e. New, Bank, Modified) | new | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.4.35 3.8/4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | low | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | E-394 sht1 | Rev #: | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

74

ID: 1455708

Points: 1.00

WHICH ONE of the following requires a Unit 2 Tech Spec LCO Action that is 1-hour or less?

- A. RWCU inboard PCIV HV-44-2F001 breaker trips and cannot be reset.
- B. Operating at 100% power when 2B Recirc Pump trips
- C. Operating at 20% power when one control rod is determined to be stuck and is declared inoperable
- D. OPCON 1 when D22 DG fails its monthly surveillance and is declared inoperable

Answer: C

Answer Explanation

U/2 TS 3.1.3.1.a.1 (for a stuck rod) is a "within 1 hour" action.

U/2 TS 3.6.3.a is a 4 hour" action.

U/2 TS 3.4.1.1.a (one recirc loop not in service) is a "within 4 hours" action.

U/2 TS 3.8.1.1.a (one DG inoperable) is a "within 24 hours" action for demonstrating operability of the remaining AC sources (SR 4.8.1.1.1.a). However, Action 'e' also applies...requiring the same SR 4.8.1.1.1.a to be performed "within 2 hours".

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 74 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|--------------|--|--|-------|----|--|------|---|--|-------|--|--|-----------------|----------------|--|--------------|---|--|-----------------|-------|--|-----------------|--|--|-----------|-------|--|---------------------------------------|------------|--------|-------------------------------------|-----|--|--|-------------|--|---|-------------|--|-------------------------------------|-----|--|---|-------------|--|-----|--|--|--|------|--|------|--|--|----------------------------|--|--|---|--|--|----------|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455708 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 74 BANK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS0041B.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | Tech Specs - Recognize condition requiring 1-hour TS Action | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.2.39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="3">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="2">RO</td> </tr> <tr> <td>Tier</td> <td colspan="2">3</td> </tr> <tr> <td>Group</td> <td colspan="2"></td> </tr> <tr> <td>KA # and Rating</td> <td colspan="2">2.2.39 3.9/4.5</td> </tr> <tr> <td>KA Statement</td> <td colspan="2">Knowledge of less than or equal to one hour Technical Specification action statements for systems.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="2">Lower</td> </tr> <tr> <td>Safety Function</td> <td colspan="2"></td> </tr> <tr> <td>10 CFR 55</td> <td colspan="2">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>Tech Specs</td> <td>Rev #:</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="2">N/A</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="2">bank 989362</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="2">bank 989362</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="2">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="2">bank 989362</td> </tr> <tr> <th colspan="3">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="2">none</td> </tr> <tr> <th colspan="3">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="2"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="2"></td> </tr> <tr> <td>Comments</td> <td colspan="2"></td> </tr> </tbody> </table> | | General Data | | | Level | RO | | Tier | 3 | | Group | | | KA # and Rating | 2.2.39 3.9/4.5 | | KA Statement | Knowledge of less than or equal to one hour Technical Specification action statements for systems. | | Cognitive level | Lower | | Safety Function | | | 10 CFR 55 | 41.10 | | Technical Reference with Revision No: | Tech Specs | Rev #: | Justification for Non SRO CFR Link: | N/A | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 989362 | | Question Source: (i.e. New, Bank, Modified) | bank 989362 | | Low KA Justification (if required): | n/a | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 989362 | | ILT | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | LORT | | | PRA: (i.e. Yes or No or #) | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | Comments | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.2.39 3.9/4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Cognitive level | Lower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | Tech Specs | Rev #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 989362 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | bank 989362 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 989362 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

75

ID: 1455175

Points: 1.00

An earthquake has occurred resulting in the breach of a wall in the Unit 1 Spent Fuel Pool (SFP).

Unit 1 SFP level is lowering, with the following:

- Operators are NOT able to mitigate the SFP level problem using S53.0 normal makeup / response to low level in fuel storage pool or reactor well
- An Equipment Operator on 352 elevation estimates the leakage rate is 800 gpm

Operators enter TSG-4.1, 'Operational Contingency Guidelines.'

WHICH ONE of the following:

- (1) identifies which method for cooling the SFP should be used **FIRST** ("Makeup" or "Spray"), and
- (2) identifies if "Locally" or "External" source for that method?

- A. (1) Makeup
(2) Locally
- B. (1) Makeup
(2) External
- C. (1) Spray
(2) Locally
- D. (1) Spray
(2) External

Answer: C

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

This question tests the examinee's ability to use the Alternate (B.5.b) Strategies of TSG-4.1. Key points in the stem are: an estimated SFP leakage rate of 800 gpm, and the fact that the refuel floor is still accessible.

The examinee need only review Section I (SFP Cooling & Makeup), specifically, including its flowchart ("Generalized Decision Process for SFP Makeup versus Spray").

Following the decision points on this flowchart...i.e., **SFP Area Accessible? (YES); SFP Leakage Excessive (YES;** see Note 3 at the bottom of the page...anything greater than 500 gpm is excessive). As such, the **FIRST** method to be used is...**"Deploy Spray Locally"**

'C' is correct for the above reasons. **(1) Spray (2) Locally**

'A' is wrong. **(1) Makeup (2) Locally** In the case of the Makeup method, "locally" is actually referred to as "Internal" in the TSG. Plausible to the examinee who cannot effectively use the flowchart.

'B' is wrong. **(1) Makeup (2) External** Plausible for the same reason as choice 'A'.

'D' is wrong. **(1) Spray (2) External** Plausible for the same reason as choices 'A' and 'B'.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 75 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------|--------|--------------|--|--|--|-------|----|--|--|------|---|--|--|-------|--|--|--|-----------------|----------------|--|--|--------------|--|--|--|-----------------|--------|--|--|-----------------|--|--|--|-----------|-------|--|--|---------------------------------------|----------------|--------|--------|-------------------------------------|-----|--|--|--|-------------|--|--|---|------|--|--|-------------------------------------|-----|--|--|---|-------------|--|--|-----|--|--|--|--|---------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455175 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 75 BANK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS2004.01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | Selecting B.5.b Strategy per TSG-4.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | G2.1.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">RO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3"></td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.1.25 3.9/4.2</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Ability to interpret reference materials, such as graphs, curves, tables, etc.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">higher</td> </tr> <tr> <td>Safety Function</td> <td colspan="3"></td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">41.10</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>TSG-4.1 page 6</td> <td>Rev #:</td> <td>1 7</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">bank 895221</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">bank</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">bank 895221</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">TSG-4.1</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | RO | | | Tier | 3 | | | Group | | | | KA # and Rating | 2.1.25 3.9/4.2 | | | KA Statement | Ability to interpret reference materials, such as graphs, curves, tables, etc. | | | Cognitive level | higher | | | Safety Function | | | | 10 CFR 55 | 41.10 | | | Technical Reference with Revision No: | TSG-4.1 page 6 | Rev #: | 1 7 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 895221 | | | Question Source: (i.e. New, Bank, Modified) | bank | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 895221 | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | TSG-4.1 | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | RO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.1.25 3.9/4.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Ability to interpret reference materials, such as graphs, curves, tables, etc. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 41.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | TSG-4.1 page 6 | Rev #: | 1 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 895221 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank 895221 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | TSG-4.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

76

ID: 1650711

Points: 1.00

SRO

118 I5 UNIT 1 ISO PHASE BUS COOLER TROUBLE alarm actuates. An EO reports both ISO PHASE fans are tripped and cannot be started. The crew enters ON-101, Loss of Isolated Phase Bus Cooling.

Conditions at T=2 minutes:

- Generator amps: 27,500
- MVARs: 285
- ISO PHASE temperature: 102 degrees C, up slow

Conditions at T=13 minutes:

- Generator amps: 19,500
- MVARs: 45
- ISO PHASE temperature: 104 degrees C, up slow

Per ON-101, which of the following actions is required?

- A. Reduce MVARs to 0, if temperature rises above 105 degrees C then perform a GP-4 Rapid Plant Shutdown.
- B. Continue to monitor temperatures and if temperature rises above 105 degrees C then continue reducing power in accordance with GP-5, Appendix 2.
- C. Reduce MVARs to 0, if temperature rises above 105 degrees C then perform load reduction to less than 7,469 generator amps.
- D. Immediately lower load to less than 7,469 generator amps.

Answer: A

Answer Explanation

Justification:

- A. Correct Answer A: Reduction of MVARs to zero is directed in ON-101, Step 2.3 prior to steps to reduce power. Step 2.4 directs power reduction to less than 20,000 amps. Step 2.7 directs a GP-4 shutdown if power is above 25% and temperatures cannot be maintained less than 105 degrees C. 19,500 amps is approximately 62% power
- B. B is NOT correct because if maximum temperature is 105 and continuing to rise. A rapid plant shutdown is required. Plausible to examinee who knows the limit of 105 degrees C but either does not recall a GP-4 shutdown would be required or does not recall that 105 is max limit and machine must be immediately removed and believes power reduction is appropriate.
- C. C is NOT correct. ON-101 does not contain guidance to lower load to 7,469. Plausible because a loss of stator cooling will result in an EHC load set runback if stator cooling is lost with stator current > 7,469 amps.
- I D. Choice D is NOT correct. ON-101 does not direct this action. Plausible for reasons given for Choice C.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 76 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------------|--|-------|-----|------|---|-------|---|-----------------|-----------------------|--------------|---|-----------------|--------|-----------------|---|-----------|------|--|--------|-------------------------------------|-----|--|-----|---|-----|-------------------------------------|----|---|-----|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1650711 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 76 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LOT0180.6P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | loss of iso phase | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 3.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 295018 AA2.01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 295018 AA2.01 3.3/3.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Partial or Complete Loss of Component Cooling Water. Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER : Component temperatures | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | Higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety function | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rev #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | NA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

77

ID: 1453889

Points: 1.00

SRO

Unit 2 is operating at 100% power

HPCI testing is in progress

A loss of EHC caused reactor pressure to spike to 1100 psig.

5 minutes after the pressure spike, Unit 2 plant conditions are as follows:

- All SCRAM actions are complete
- All APRMs are reading between 3.4 and 3.8 percent power
- All squib continuity lights are lit
- Suppression Pool temperature is 105 degrees F and rising 1 degree every 4 minutes

20 minutes after the pressure spike

- All APRMs are still reading between 3.4 and 3.8 percent power

Given

- T-213 INDIVIDUAL CONTROL ROD SCRAM/SOLENOID DE-ENERGIZATION
- T-215 DE-ENERGIZATION OF SCRAM SOLENOIDS
- T-216 MANUAL ISOLATION AND VENT OF SCRAM AIR HEADER
- T-217 RPS/ARI RESET AND BACKUP METHOD OF DRAINING SCRAM DISCHARGE VOLUME
- T-218 CONTROL ROD INSERTION BY WITHDRAW LINE VENTING
- T-219 MAXIMIZING CRD COOLING WATER HEADER FLOW DURING ATWS CONDITIONS

Which of the following lists the procedure to be used to insert rods, and if SBLC injection is required

Procedures to insert rods

SBLC injection required

- | | | |
|----|--------------------------------|-----|
| A. | T-213, T-215, T-216, and T-219 | Yes |
| B. | T-213, T-215, T-216, and T-219 | No |
| C. | T-217 and T-218 | No |
| D. | T-217 and T-218 | Yes |

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

- << Incorrect examinee must determine that a SCRAM setpoint was exceeded and based on power level either RPS or ARI inserted most rods as such the SCRAM air header is depressurized air header depressurized per T-101 RC/Q13 T-217 and T-218 are directed plausible to the examinee who does not interpret the stem as a hydraulic ATWS and either does not recall the values for note 16 reactor shutdown (IRM below range 6) or miss applies step RC/Q4
- B Incorrect examinee must determine that a SCRAM setpoint was exceeded and either RPS or ARI inserted most rods as such the SCRAM air header is depressurized air header depressurized per T-101 RC/Q13 T-217 and T-218 are directed plausible to the examinee who does not interpret the stem as a hydraulic ATWS and or does not recall requirement to inject SLC prior to 110 degrees in the suppression pool
- C Incorrect plausible to examinee who either does not recall the values for note 16 reactor shutdown (IRM below range 6) or miss applies step RC/Q4 and or does not recall requirement to inject SLC prior to 110 degrees in the suppression pool
- D Correct examinee must determine that a SCRAM setpoint was exceeded and based on power level either RPS or ARI inserted most rods, (but must determine/ interpret that all rods did not insert to the NON-ATWS position of beyond 02), as such the SCRAM air header is depressurized. If the air header is depressurized per T-101 RC/Q13 T-217 and T-218 are directed and pool temperature is rising indicating a steam input to pool as such the SRO candidate must recognize (without reference) that TRIPS require him to order SLC injection prior to pool exceeding 110 degrees per T-101-RC/Q-16

T-101

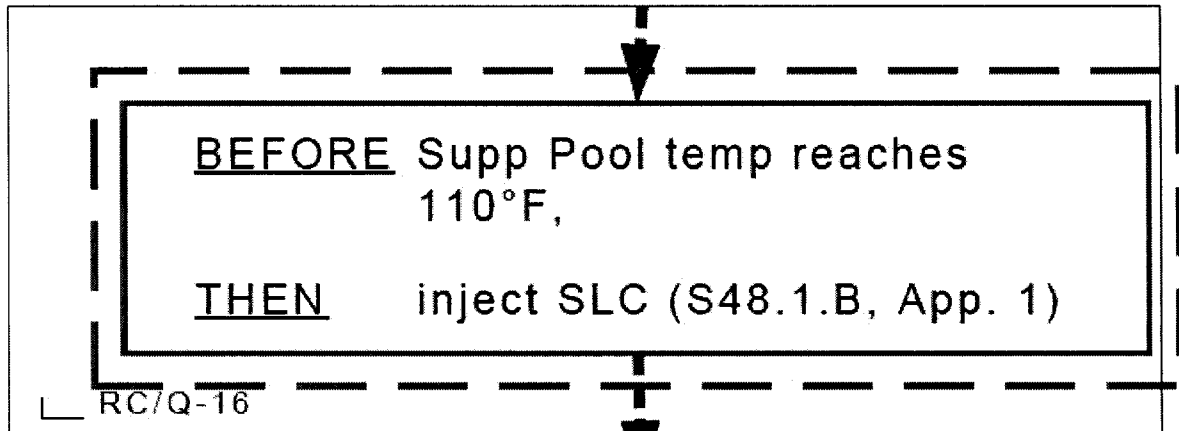
| Insert control rods using one <u>OR</u> more of the following: | |
|---|---|
| Scram valves Open | Scram valves Closed |
| <ul style="list-style-type: none"> • Vent/drain scram discharge volume (T-217) • Withdraw line vent (T-218) | <ul style="list-style-type: none"> • Scram solenoids (T-215) • Air header (T-216) • Maximize CRD cooling water flow (T-219) • Individual rod scrams (T-213) |

RC/Q-13

T-101

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO



EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 77 Info | |
|--------------------------|----------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 2 |
| Difficulty: | 3.00 |
| System ID: | 1453889 |
| User-Defined ID: | Q# 77 NEW |
| Lesson Plan Objective: | LGSOPS1560.06 |
| Topic: | SRO Pool temperature |
| RO: | 4.0 |
| SRO: | 4.1 |
| KA#: | 295037 EA2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|---|---|--|--------|----|
| Comments: | General Data | | | |
| | | | | |
| | Level | SRO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295037 EA2.04 4.0/4.1 | | |
| | KA Statement | Ability to determine and/or interpret the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN : Suppression pool temperature | | |
| | Cognitive level | higher | | |
| | Safety Function | 1 | | |
| | 10 CFR 55 | 43.5 | | |
| | Technical Reference with Revision No: | T-101 | Rev #: | 22 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

78

ID: 1433288

Points: 1.00

SRO

Unit 1 is operating at 100% power

At 13:02 the following annunciator was received in the MCR: 006-I-2-L CONT EL 254 PB WEST.

- The fire is in the static inverter room in the MCR annunciator fuse panel
- At 13:12 the fire brigade leader reports the fire is extinguished
- As a result of the fire MCR annunciator panel 107 REACTOR AND 003 RAD have lost power
- The CRS entered ON-122 for the loss of annunciators

Which of the following identifies an additional procedure the CRS is required to enter and the EAL declaration, if any?

| | <u>Additional Procedure entered</u> | <u>EAL declaration required</u> |
|----|-------------------------------------|---------------------------------|
| A. | T-104 | None |
| B. | T-104 | Unusual Event |
| C. | T-103 | None |
| D. | T-103 | Unusual Event |

Answer: C

Answer Explanation

- A Incorrect ON-122 provides direction for the TRIP procedure to enter if annunciator panels which contain entry conditions to T-103 OR T-104 are lost. ON-122 step 4.4 directs T-103 entry plausible to the examinee who incorrectly recalls which Trip procedure to enter. The second part is correct the fire is extinguished in less than 15 minutes so no HU3 entry and per the last rev of EP-AA-1008 addendum 3 MU4 MCR indication no longer applies
- B Incorrect Incorrect ON-122 provides direction for the TRIP procedure to enter if annunciator panels which contain entry conditions to T-103 OR T-104 are lost. ON-122 step 4.4 directs T-103 entry plausible to the examinee who incorrectly recalls which Trip procedure to enter. The second part is incorrect the fire is extinguished in less than 15 minutes so no HU3 entry and per the last rev of EP-AA-1008 addendum 3 MU4 no longer applies
- C Correct since the annunciator panel that lost power has T-103 entry condition (DIV 1-4 steam leak detection) ON-122 will direct entry to T-103 for performance of T-290 The second part is correct the fire is extinguished in less than 15 minutes so no HU3 entry and per the last rev of EP-AA-1008 addendum 3 MU4 no longer applies
- D Incorrect plausible to the examinee who recalls T-103 entry is required but incorrectly believes either MU4 or HU3 should be declared.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 78 Info | |
|--------------------------|---------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 4.00 |
| | |
| System ID: | 1433288 |
| User-Defined ID: | Q# 78 NEW |
| Lesson Plan Objective: | LOT1550.03 |
| | |
| Topic: | SRO Fire protection |
| RO: | 3.1 |
| SRO: | 3.6 |
| KA#: | 600000 AA2.17 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------|--|--|---------------|------------------|
| Comments: | General Data | | | |
| | Level | SRO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 600000 AA2.17 301/3.6 | | |
| | KA Statement | Plant Fire on site Ability to determine and interpret the following as they apply to PLANT FIRE ON SITE: AA2.17 Systems that may be affected by the fire | | |
| | Cognitive level | higher | | |
| | Safety Function | 8 | | |
| | 10 CFR 55 | 43.5 | | |
| | Technical Reference with Revision No: | T-103 ON-122 | Rev #: | 2 3 2 0 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | n/a | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e, A-Systems or B-Procedures) | | | |
| | Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

79

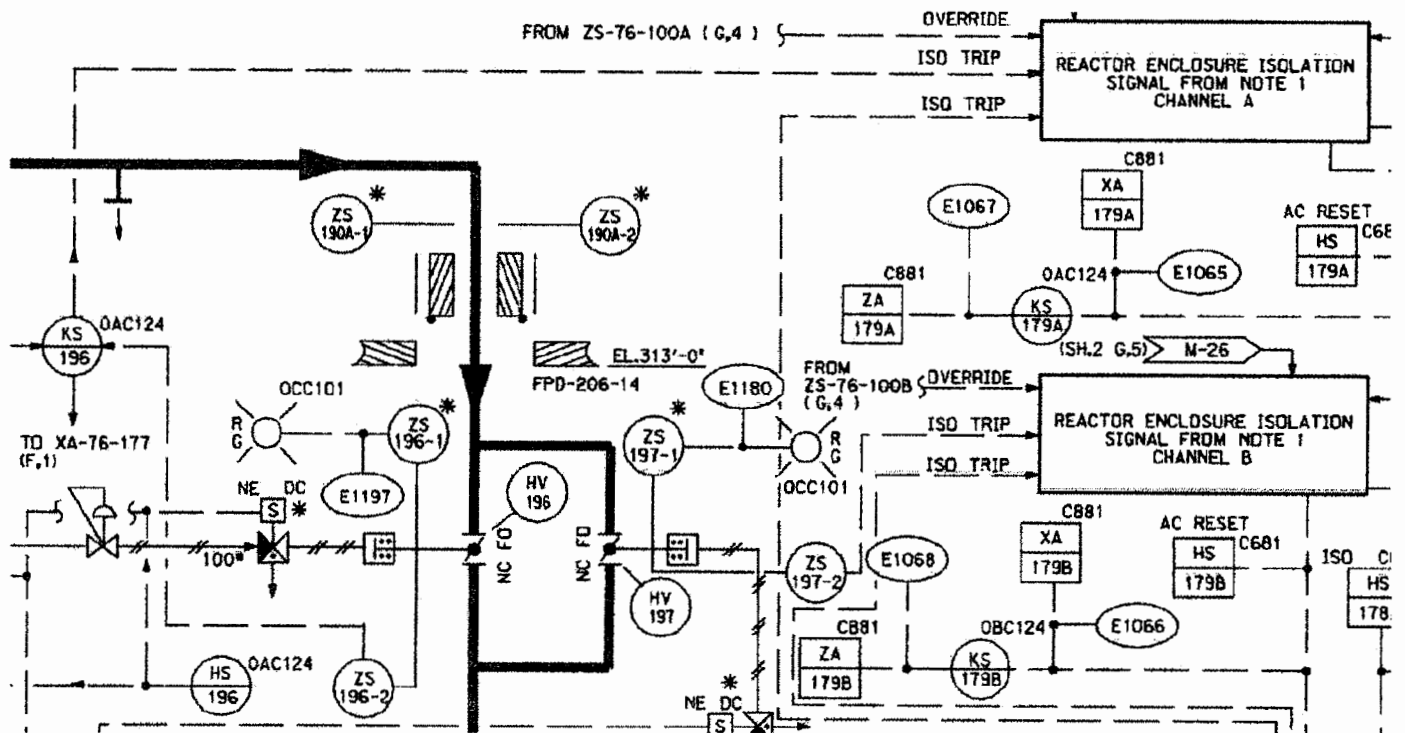
ID: 1454790

Points: 1.00

SRO

Unit 1 is in OPCON 1

- The pressure regulator for HV-076-196 SGTS (Standby Gas Treatment System) unit 1 ex isolation valve, air supply valve has a small air leak
- While the FIN team is investigating the pressure regulator becomes detached from the air line.
- The Fin team closes HV-076-196 (AS) to stop the leak.
- After the air isolation valve is closed the FIN team reports the status to the MCR.
- The RO reports that neither SGBT fan is running



Which of the choices below correctly identifies the INOPERABLE SGTS Subsystem(s) AND a required TS action?

| INOP subsystem(s) | T.S action |
|-------------------|----------------------------------|
| A. ONLY A | Restore subsystem within 7 days |
| B. Both A AND B | Begin a shutdown within 1 hour |
| C. ONLY A | Restore subsystem within 14 days |
| D. Both A and B | Restore subsystem within 2 hours |

Answer: A

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer Explanation

- A Correct Loss of air will cause HV-076-0196 to fail open this should start A SBGT only. failure to start makes A SBGT INOP this is a 7 day LCO
- B Incorrect plausible to the examinee who does not recall or cannot determine from information provided that one valve opening does not start both trains of SBGT. T.S action would be correct if both trains were INOP
- C Incorrect A train only is correct however the T.S action is incorrect plausible to examinee who confuses SBGT T.S with CREFAS T.S
- D Incorrect only A is INOP and T.S is for one train INOP

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 79 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 3.00 |
| | |
| System ID: | 1454790 |
| User-Defined ID: | Q# 79 NEW |
| Lesson Plan Objective: | LOT0200.13 |
| | |
| Topic: | SRO SGBT |
| RO: | 3.1 |
| SRO: | 4.2 |
| KA#: | 295019 2.2.36 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | |
|---|--|
| Level | SRO |
| Tier | 1 |
| Group | 1 |
| KA # and Rating | 295019 2.2.36 3.1/4.2 |
| KA Statement | Partial or Complete Loss of Instrument Air Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations. |
| Cognitive level | higher |
| Safety Function | 8 |
| 10 CFR 55 | 43.2 |
| Technical Reference with Revision No: | M-0076 sht 5 Rev #: <input type="text"/> |
| Justification for Non SRO CFR Link: | N/A |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new |
| Question Source: (i.e. New, Bank, Modified) | new |
| Low KA Justification (if required): | n/a |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new |
| ILT | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none |
| LORT | |
| PRA: (i.e. Yes or No or #) | |
| LORT Question Section: (i.e, A-Systems or B-Procedures) | |
| Comments | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

80

ID: 1454228

Points: 1.00

SRO

Plant conditions are as follows;

- Reactor power is 30% down slow
- The RO is inserting control rods
- Reactor level is -65 inches down slow
- All steps up to and including LQ-19 of T-117 are complete
- Reactor pressure is being maintained with SRVs
- The main turbine was tripped due to HI vibration
- The main condenser vacuum breakers were opened

With regard to the procedures listed below, which of the choices identifies the system(s) utilized in the EOP mitigation strategy for level control after the turbine trip until the ATWS is terminated?

T-251, Establish A HPCI Flow path Via Feedwater Only
T-270, Terminate and Prevent Injection Into The RPV
S06.1.D, Post SCRAM Level Control

- A. HPCI per T-251 but NOT RCIC per T-270
- B. RCIC per T-270 but NOT HPCI per T-251
- C. HPCI per T-251 AND RCIC per T-270
- D. Condensate Pumps per S06.1.D

Answer: C

Answer Explanation

- A Incorrect plausible to the examinee who does not recall that T-270, terminate and prevent injection to the RPV allows RCIC to inject during an ATWS.
- B Incorrect although RCIC will be injecting it is not sufficient to maintain level also HPCI can be used for after T-270 is complete and the SRO moves to step LQ-119 which will allow HPCI through feedwater only per T-251
- C Correct post turbine trip vacuum breakers are opened condensate is not available due to ATWS and pressure being maintained 990-1096 HPCI is available for level control through feedwater per T-251 and RCIC is allowed to inject per T-270
- D Incorrect although cond. pps are available with an ATWS in progress reactor pressure will not be lowered per stop sign in T-101RCP-18

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 80 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------|---|--------------|--|--|--|-------|-----|--|--|------|---|--|--|-------|---|--|--|-----------------|----------------------|--|--|--------------|---|--|--|-----------------|--------|--|--|-----------------|---|--|--|-----------|------|--|--|---------------------------------------|-------|--------|---|-------------------------------------|-----|--|--|--|-----|--|--|---|-----|--|--|-------------------------------------|-----|--|--|---|-----|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1454228 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 80 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS1560.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SRO ATWS turb trip | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 295005 2.4.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">SRO</td> </tr> <tr> <td>Tier</td> <td colspan="3">1</td> </tr> <tr> <td>Group</td> <td colspan="3">1</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">295005 2.4.6 3.7/4.7</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Main Turbine Generator Trip Emergency Procedures / Plan Knowledge of EOP mitigation strategies.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">higher</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">5</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">43.5</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>T-101</td> <td>Rev #:</td> <td>2</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">N/A</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">new</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">new</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">new</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | SRO | | | Tier | 1 | | | Group | 1 | | | KA # and Rating | 295005 2.4.6 3.7/4.7 | | | KA Statement | Main Turbine Generator Trip Emergency Procedures / Plan Knowledge of EOP mitigation strategies. | | | Cognitive level | higher | | | Safety Function | 5 | | | 10 CFR 55 | 43.5 | | | Technical Reference with Revision No: | T-101 | Rev #: | 2 | Justification for Non SRO CFR Link: | N/A | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | Question Source: (i.e. New, Bank, Modified) | new | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 295005 2.4.6 3.7/4.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Main Turbine Generator Trip Emergency Procedures / Plan Knowledge of EOP mitigation strategies. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | T-101 | Rev #: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

81

ID: 1433008

Points: 1.00

SRO

A LOCA occurred on unit 1

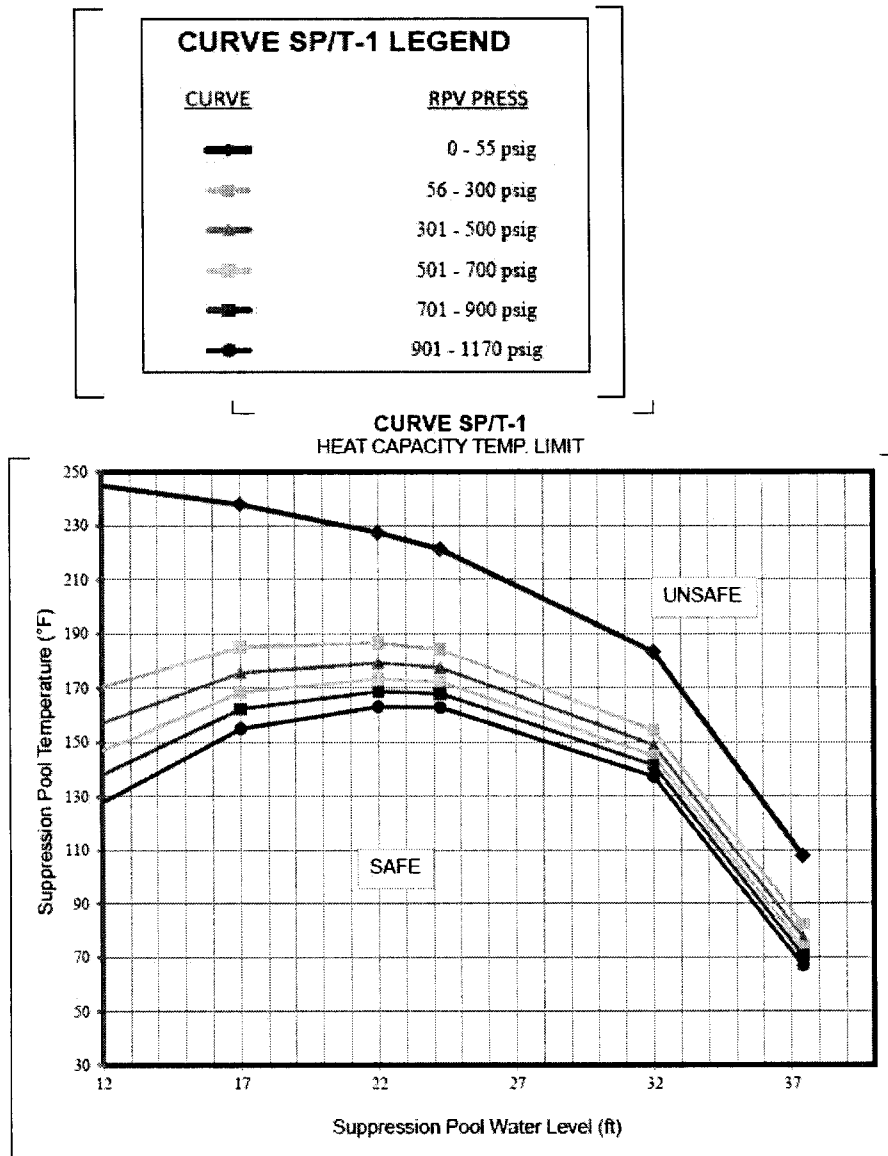
Plant conditions are as follows:

- All control rods fully inserted
- Reactor water level is - 10 inches steady
- Reactor pressure is 960 psig steady
- Suppression pool water level is 15 feet steady
- Suppression pool water temperature on SPOTMOS TI-41-101 A & B is 135° F up slow
- B RHR is in suppression pool cooling
- B RHR suction temperature is 149° F

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Given the following information:



Which of the following (1) is required to be directed by the CRS and (2) The reason for this action?

- A. (1) Depressurize the reactor to <900 psig per T-102
(2) Suppression pool temperature is approaching HCTL Limit
- B. (1) Emergency Blowdown IAW T-112
(2) HCTL is being exceeded
- C. (1) Depressurize the reactor to 750 psig per T-102
(2) HCTL is being exceeded
- D. (1) Emergency Blowdown IAW T-112
(2) Suppression pool temperature is approaching HCTL Limit

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer: B

Answer Explanation

A Incorrect

- (1) Depressurize the reactor to <900 psig per T-102
- (2) Suppression pool temperature is approaching HCTL Limit
HTCL is being exceeded, a blowdown is required per SP/T-7 of T-102 This action and reason are plausible to the examinee who does not recall T-102 note 2 which makes the TI-41-101A&B not usable

B Correct

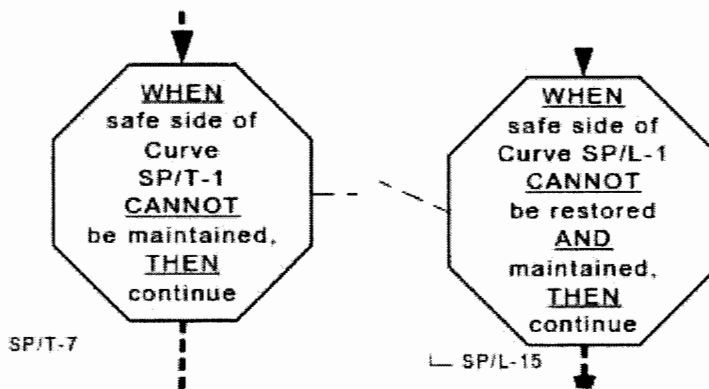
HTCL is being exceeded so a blowdown is required per T-112 from step SP/T-8 of T-102

C Incorrect

- (1) Depressurize the reactor to <900 psig per T-102
- (2) HCTL is being exceeded
Plausible to the examinee who confuses step SP/T-7 (cannot be maintained) with steps like SP/L-15 (cannot be Restored and Maintained)

D Incorrect

- (1) Emergency Blowdown IAW T-112
- (2) Suppression pool temperature is approaching HCTL Limit
Plausible to the Examinee who does not recognize that HCTL has already been exceeded and believe a blowdown is warranted prior to exceeding HCTL



#2

SPOTMOS probes located at Supp Pool level of 17.8 ft. RHR suction temp with RHR operating below 17.8 ft is valid Supp Pool temp.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 81 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1433008 |
| User-Defined ID: | Q# 81 NEW |
| Lesson Plan Objective: | LGSOPS1506.6 |
| Topic: | SRO Pool temp |
| RO: | 4.2 |
| SRO: | 4.2 |
| KA#: | 295026 2.4.47 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|-----------------|--|---|---------------|--------|
| Comments: | General Data | | | |
| | Level | SRO | | |
| | Tier | 1 | | |
| | Group | 1 | | |
| | KA # and Rating | 295026 2.4.47 4.2/4.2 | | |
| | KA Statement | Suppression Pool High Water Temperature 2.4.47 Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material. | | |
| | Cognitive level | higher | | |
| | Safety Function | 5 | | |
| | 10 CFR 55 | 43.5 | | |
| | Technical Reference with Revision No: | T-102 | Rev #: | 2 5 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | n/a | | |
| | ILF | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| | LORT Question Section: (i.e., A-Systems or B-Procedures) | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

82

ID: 1454368

Points: 1.00

SRO

Unit 2 is operating at 100% power, with a normal electrical lineup.

- A grid disturbance results in 500 KV grid voltage lowering to 497 KV

Which of the choices identifies the adverse generator condition that is prevented by adjusting VARs as directed by E-5, Grid Emergency and if Technical Specification 3.8.1.1., Sources Operating entry is required?

| | <u>Adverse condition</u> | <u>TS 3.8.1.1 Entry Required</u> |
|----|--------------------------|----------------------------------|
| A. | Under Excitation | Yes |
| B. | Under Excitation | No |
| C. | Overheating | No |
| D. | Overheating | Yes |

Answer: D

Answer Explanation

The examinee must understand that lowering grid voltage will cause VARS to rise. Excessive vars will lead to machine overheating. While lowering power will reduce vars it will not both comply with the LD request for max MWE and stabilize the plant.

- A Incorrect Over heating the stator windings is correct. Plausible to candidate who does not recall basis for VAR limits and machine heating
- B Incorrect will not maintain max MWE and under excitation would be correct if voltage was rising resulting in lowering VARS on the main generator (i.e., move down on the Generator Capability Curve). T.S entry is required due to bus voltage <498
- D correct reducing vars will reduce heat from the stator The given conditions (lowering grid voltage) will cause the generator automatic voltage regulator to attempt to raise grid voltage, causing the generator to pick up additional VARS (i.e., move up on the Generator Capability Curve). Without operator action, this would result in exceeding the generator capability curve T.S Entry is required due to bus voltage <498
- C This would be true if grid voltage was rising, resulting in lowering VARS on the main generator (i.e., move down on the Generator Capability Curve). T>entry is required

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 82 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| | |
| System ID: | 1454368 |
| User-Defined ID: | Q# 82 NEW |
| Lesson Plan Objective: | LGSOPS0032.10 |
| | |
| Topic: | SRO |
| RO: | 3.6 |
| SRO: | 3.8 |
| KA#: | 70000 A2.10 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | |
|---|---|--------|
| Level | SRO | |
| Tier | 1 | |
| Group | 1 | |
| KA # and Rating | APE: 700000 A2.10 3.6/3.8 | |
| KA Statement | Ability to determine and/or interpret the following as they apply to GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES:AA2.10 Generator overheating and the required actions | |
| Cognitive level | higher | |
| Safety Function | 8 | |
| 10 CFR 55 | 43.5 | |
| Technical Reference with Revision No: | S32.10C | Rev #: |
| Justification for Non SRO CFR Link: | n/a | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | |
| Question Source: (i.e. New, Bank, Modified) | new | |
| Low KA Justification (if required): | n/a | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | |
| ILT | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| LORT | | |
| PRA: (i.e. Yes or No or #) | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

83

ID: 1455099

Points: 1.00

SRO

Unit 1 was operating at 100% power when the following occurred

- Reactor SCRAM on HI Drywell pressure
- Drywell pressure is currently at 12 psig
- Drywell radiation monitors are reading 200 R/hr up slow
- RPV Level is unknown

T-116 step RF-3 directs assessing core damage

Which of the following describes if core damage is occurring and the required action to take based on the conditions given above?

| | <u>Core Damage</u> | <u>Required Action</u> |
|----|--------------------|-----------------------------|
| A. | Is occurring | Continue in T-102 and T-116 |
| B. | Is occurring | Enter SAMPS |
| C. | Is NOT occurring | Continue in T-102 and T-116 |
| D. | Is NOT occurring | Enter SAMPS |

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

High Drywell Pressure Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE : Drywell radiation levels

The candidate must determine that a steam leak into primary containment exists causing the DW pressure rise and that there is indication of core damage from the given radiation levels in containment and as such SAMPS should be entered and TRIPS exited.

TRIPS NOTE 19

#19

"Core damage is occurring" refers to ongoing fuel degradation caused by loss of Adequate Core Cooling (TSG-3.8). Indications include:

- Rising Pri Cnt radiation levels
- Rising Pri Cnt H₂ levels
- Rising MSL, SJAE, offgas OR Rx bldg radiation levels
- RPV level/pressure history prior to loss of RPV level indication

From TSG-3.8

- Drywell radiation levels above the primary containment radiation rate corresponding to a loss of the fuel clad barrier per NEI 99-01 EAL scheme. (~300 $\mu\text{Ci/gm}$ coolant activity dispersed in the drywell)

From EP-AA-1008 Addendum 3

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

FISSION PRODUCT BARRIER DEGRADATION

FC5

Initiating Condition:

Primary Containment Radiation

Operating Mode Applicability:

1, 2, 3

Fission Product Barrier (FPB) Threshold:

LOSS

Drywell radiation monitor reading > 1.90 E+02 R/hr (190 R/hr).

Basis:

The radiation monitor reading corresponds to an instantaneous release of all reactor coolant mass into the primary containment, assuming that reactor coolant activity equals 300 $\mu\text{Ci/gm}$ dose equivalent I-131. Reactor coolant activity above this level is greater than that expected for iodine spikes and corresponds to an approximate range of 2% to 5% fuel clad damage. Since this condition indicates that a significant amount of fuel clad damage has occurred, it represents a loss of the Fuel Clad Barrier.

The radiation monitor reading in this threshold is higher than that specified for RCS Barrier RC5 Loss Threshold since it indicates a loss of both the Fuel Clad Barrier and the RCS Barrier. Note that a combination of the two monitor readings appropriately escalates the emergency classification level to a Site Area Emergency.

There is no Fuel Clad Barrier Potential Loss threshold associated with Primary Containment Radiation.

Basis Reference(s):

1. NEI 99-01 Rev 6, Table 9-F-2

- A Incorrect Samps are required to be entered if core damage is occurring. TRIP note 19 reminds the SRO of indications of core damage. one of these indications is rising containment radiation. Plausible to the candidate that believes even with core damage under the current circumstances SAMPS are not required to be entered.
- B Correct: TRIP note 19 reminds the SRO of indications of core damage. one of these indications is rising containment radiation. SAMPS are entered if core damage exists per note 19 core damage does exist
- C Incorrect: Core Damage is occurring. Plausible to the candidate that incorrectly determines that Radiation levels need to be higher than 200 R/hr to indicate core damage.
- D Incorrect: Core Damage is occurring. Plausible to the candidate that incorrectly determines that Radiation levels need to be higher than 200 R/hr to indicate core damage.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 83 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|--|--------------|--|--|--|-------|-----|--|--|------|---|--|--|-------|---|--|--|-----------------|-----------------------|--|--|--------------|---|--|--|-----------------|-------|--|--|-----------------|---|--|--|-----------|------|--|--|---------------------------------------|-------|--------|--|-------------------------------------|-----|--|--|--|-----|--|--|---|-----|--|--|-------------------------------------|-----|--|--|---|-----|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455099 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 83 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS1560.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SRO DW press and rad monitoring | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 3.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 295010 AA2.03 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">SRO</td> </tr> <tr> <td>Tier</td> <td colspan="3">1</td> </tr> <tr> <td>Group</td> <td colspan="3">2</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">295010 AA2.03 3.3/3.6</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">High Drywell Pressure Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE : Drywell radiation levels</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">lower</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">5</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">43.5</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>T-102</td> <td>Rev #:</td> <td></td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">N/A</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">new</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">new</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">new</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | SRO | | | Tier | 1 | | | Group | 2 | | | KA # and Rating | 295010 AA2.03 3.3/3.6 | | | KA Statement | High Drywell Pressure Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE : Drywell radiation levels | | | Cognitive level | lower | | | Safety Function | 5 | | | 10 CFR 55 | 43.5 | | | Technical Reference with Revision No: | T-102 | Rev #: | | Justification for Non SRO CFR Link: | N/A | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | Question Source: (i.e. New, Bank, Modified) | new | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 295010 AA2.03 3.3/3.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | High Drywell Pressure Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE : Drywell radiation levels | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | lower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | T-102 | Rev #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

84

ID: 1455896

Points: 1.00

SRO

Unit 1 was at 100% power when a condenser vacuum leak developed.

Power has been reduced to 70% with condenser vacuum continuing to lower.
Off gas flow has risen from 20 SCFM to 75 SCFM

Current condenser vacuum is 21.2 "Hg down slow.
Current offgas recombiner outlet temperature is 440 °F

Based on the given plant conditions WHICH ONE of the following identifies the action(s) required and follow up procedure to be directed per OT-116 "Loss of Condenser Vacuum"?

| | <u>Action(s) required</u> | <u>Follow up procedure to direct</u> |
|----|---|---|
| A. | Manually TRIP Main Turbine WITHOUT performing a GP-4 shutdown | MA-AA-716-050-1000, Condenser Air In-leakage Testing Guide And Limits |
| B. | Manually TRIP Main Turbine WITHOUT performing a GP-4 shutdown | ON-103, Control Of Sustained Combustion In The Off Gas System |
| C. | Manually TRIP Main Turbine AFTER performing a GP-4 shutdown | MA-AA-716-050-1000, Condenser Air In-leakage Testing Guide And Limits |
| D. | Manually TRIP Main Turbine AFTER performing a GP-4 shutdown | ON-103, Control Of Sustained Combustion In The Off Gas System |

Answer: A

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

From the stem of the question the student identifies that 21.2" Hg condenser vacuum. Based on this information the Main Turbine should have tripped on Low Vacuum (set point of 21.5 " Hg) OT-116 Attachment 1 step 1:

1. **IF** condenser vacuum reaches 21.5" Hg Vac. as confirmed by Control Room instrumentation,
THEN manually **TRIP** Main Turbine.

Additionally, the Bases of OT-116 states

6.1 If Condenser vacuum drops to the Main Turbine trip setpoint, the operator is directed to manually trip the turbine. This action is specified to ensure Main Turbine operation is suspended for Condenser vacuum conditions less than the automatic trip setpoint value. This will minimize the potential for Condenser/Turbine exhaust hood over pressurization and resultant rupture of the diaphragms on each Condenser shell. It should be noted that a Main Turbine trip at Reactor powers above the Turbine Trip Scram bypass setpoint (nominal 29.5% rated thermal power) will result in a Reactor scram. This protective action is expected and should not limit the operator's actions in tripping the Main Turbine.

This acknowledges that the priority is to trip the turbine and that a reactor scram should be expected if power is above 29.5%.

Additional information provided in the stem of Recombiner outlet temperature of 440 °F was included to make ON-103 distractor more plausible. Value of 440 °F was derived based on normal full power recombining performance results in an outlet temperature of 480 °F. For additional reference the setpoint for ARC-MCR-127 B1, 1 Unit Recombiner Outlet Hi Temp does not occur until 840 °F.

- A Correct as described above MA-AA-716-050-1000 is directed from OT-116 as a follow up action
- B Wrong - Plausible if the student confuses the bases for breaking condenser vacuum on loss of sealing steam with the bases for tripping the Main Turbine on low condenser vacuum. From the stem off gas flow increases from 20 to 75 SCFM, symptoms for ON-103 Control of sustained combustion in the off gas system include a sudden change in off gas system flows, although this is one symptom and ON-103 is directed from OT-116 if indications of combustion exist in the off gas system the SRO must determine that the increase in flow is the result of a leak and not combustion supported by offgas recombining outlet temperature in the normal range.
- C Wrong - Plausible if the student does not recognize that condenser vacuum is below the Turbine trip setpoint (21.5 " Hg) and applies normal step OT-116 step 3.4 actions to perform a GP-4 shutdown.
- D Wrong - Plausible if the student does not recognize that condenser vacuum is below the Turbine trip setpoint (21.5 " Hg) and applies normal step OT-116 step 3.4 actions to perform a GP-4 shutdown and if the student confuses the bases for breaking condenser vacuum on loss of sealing steam with the bases for tripping the Main Turbine on low condenser vacuum. From the stem off gas flow increases from 20 to 75 SCFM, symptoms for ON-103 Control of sustained combustion in the off gas system include a sudden change in off gas system flows, although this is one symptom and ON-103 is directed from OT-116 if indications of combustion exist in the off gas system the SRO must determine that the increase in flow is the result of a leak and not combustion supported by offgas recombining outlet temperature in the normal range.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 84 Info | |
|--------------------------|----------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 4.00 |
| System ID: | 1455896 |
| User-Defined ID: | Q# 84 NEW |
| Lesson Plan Objective: | LGSOPS1540.5 (OT-116) |
| Topic: | SRO- Loss of Condenser VAC |
| RO: | |
| SRO: | 4.4 |
| KA#: | 295002 2.4.49 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|---|---|--|--------|--------|
| Comments: | General Data | | | |
| | | | | |
| | Level | SRO | | |
| | Tier | 1 | | |
| | Group | 2 | | |
| | KA # and Rating | 295002 2.4.49 SRO 4.4 | | |
| | KA Statement | APE: 295002 Loss of Main Condenser Vacuum 2.4.49 Ability to perform without reference to procedures those actions that require immediate operation of system components and controls. | | |
| | Cognitive level | High | | |
| | Safety Function | 3 - Reactor Pressure Control | | |
| | 10 CFR 55 | 43.5 | | |
| | Technical Reference with Revision No: | OT-116 | Rev #: | 3 8 |
| | Justification for Non SRO CFR Link: | N/A | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | |
| | Question Source: (i.e. New, Bank, Modified) | New | | |
| | Low KA Justification (if required): | | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

85

ID: 1455121

Points: 1.00

SRO

An emergency has been declared due to a steam leak in the Unit 2 Reactor Enclosure. The following alarms are in:

- SOUTH STACK HI RAD
- SOUTH STACK HI HI RAD

Unit 2 reactor enclosure HVAC rad monitors read as follows

- Unit 2 RE Exhaust Rad
 - RRSH-26-2R605A = 1.5 mR/hr
 - RRSH-26-2R605B = 1.4 mR/hr
 - RRSH-26-2R605C = 1.3 mR/hr
 - RRSH-26-2R605D = 1.5 mR/hr

All available methods to isolate the leak have been attempted without success.

The following MCR radiological effluents indications exist:

- WIDE RANGE MONITOR RE26076-4 = 2.224E+02 $\mu\text{Ci}/\text{Sec}$
- WIDE RANGE MONITOR RE26076-2 = 1.136E-06 $\mu\text{Ci}/\text{cc}$
- NORTH STACK VENT RE26075A-1 = 2.992E-10 $\mu\text{Ci}/\text{cc}$
- NORTH STACK VENT RE26075B-1 = 2.927E-10 $\mu\text{Ci}/\text{cc}$
- SOUTH STACK VENT RE26285A-3 = 4.584E-04 $\mu\text{Ci}/\text{cc}$
- SOUTH STACK VENT RE26285B-3 = 4.182E-04 $\mu\text{Ci}/\text{cc}$

| Table R1 – Effluent Monitor Thresholds | | | | |
|--|---|-------------------------------------|-------------------------------------|-------------------------------------|
| | General Emergency | Site Area Emergency | Alert | Unusual Event |
| North Stack | 1.92 E+08 $\mu\text{Ci}/\text{sec}$ | 1.92 E+07 $\mu\text{Ci}/\text{sec}$ | 1.92 E+06 $\mu\text{Ci}/\text{sec}$ | 2.20 E+04 $\mu\text{Ci}/\text{sec}$ |
| | (WR Monitor: RIX-26-076-4) | | | |
| South Stack | 2.71 E-01 $\mu\text{Ci}/\text{cc}$ | 2.71 E-02 $\mu\text{Ci}/\text{cc}$ | 2.71 E-03 $\mu\text{Ci}/\text{cc}$ | 3.09 E-05 $\mu\text{Ci}/\text{cc}$ |
| | (Unit 1: RY26-185A-3 / RY26-185B-3 or Unit 2 RY26-285A-3 / RY26-285B-3) | | | |

WHICH ONE of the following identifies the **CURRENT** source of the offsite release and the required procedure action?

- A. North Stack
Perform ST-6-104-880-0, Gaseous Effluent Dose Rate Determination
- B. North Stack
Enter and execute T-104 Radiological Release
- C. South Stack
Enter and execute T-104 Radiological Release
- D. South Stack
Perform ST-6-104-880-0, Gaseous Effluent Dose Rate Determination

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer: A

| Answer Explanation | | |
|--------------------|------------|--|
| | ANSWER | North Stack, Perform ST-6-104-880-0, Gaseous Effluent Dose Rate Determination: Correct. With Reactor Enclosure Exhaust Rad greater than 1.35 mR/hr, a Secondary Containment Isolation will occur and the release will continue through Standby Gas which discharges through the North Stack. With SOUTH STACK HI HI RAD in alarm, the ARC directs performance of ST-6-104-880-0. The Unit 2 South Stack Noble Gas channel is below the ALERT threshold of table R-1, therefore meeting T-104 entry is not required. |
| | DISTRACTOR | North Stack, Enter and execute T-104 Radiological Release: Incorrect, Release point correct but the ALERT limit has not been exceeded for entry into T-104. Plausible to the examinee who does not recall the T-104 entry (alert rad level) |
| | DISTRACTOR | South Stack, Enter and execute T-104 Radiological Release: Incorrect, the release rates are below any of the EAL thresholds and T-104 entry is not required since no ALERT thresholds have been met for release rates. Also, the South Stack release will stop following a Secondary Containment isolation signal. Plausible to the examinee who does not recognize that the unit 2 reactor hvac has isolated and does not recall the T-104 entry (alert rad level) |
| | DISTRACTOR | South Stack, Perform ST-6-104-880-0, Gaseous Effluent Dose Rate Determination: Incorrect, the South Stack release will stop following a Secondary Containment isolation signal. Plausible to the examinee who does not recognize that the unit 2 reactor hvac has isolated |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | |
|--------------------------|--|
| Question 85 Info | |
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 2.50 |
| | |
| System ID: | 1455121 |
| User-Defined ID: | Q# 85 BANK |
| Lesson Plan Objective: | LLOT1790.4 |
| | |
| Topic: | (SRO) Assess Rad Effleunt EAL Table to determine release point and required action |
| RO: | 3.6 |
| SRO: | 4.3 |
| KA#: | 295017 AA2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|--|---|---------------|---------|
| Level | SRO | | |
| Tier | 1 | | |
| Group | 2 | | |
| KA # and Rating | 295017 AA2.04 3.6/4.3 | | |
| KA Statement | High Off-Site Release Rate Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE : †Source of off-site release | | |
| Cognitive level | higher | | |
| Safety Function | 9 | | |
| 10 CFR 55 | 43.5 | | |
| Technical Reference with Revision No: | T-104 EP-AA-1008 addendu 3 | Re v #: | 13 2 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | 2012 Cert Exam 1006662 2010 NRC exam | | |
| Question Source: (i.e. New, Bank, Modified) | 2012 Cert Exam 1006662 2010 NRC exam | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | 2012 Cert Exam 1006662 2010 NRC exam | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | also 295038EA2.04 4.1/4.5 | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

86

ID: 1659209

Points: 1.00

SRO

Unit 1 is operating at 100% power when the following occurs;

T=10:00

- The following alarms come in
 - 109-A1, 1 SERVICE WATER HI RADIATION
 - 109-A2, 1 SERVICE WATER RAD MONITOR HI HI/INOP DNSCL
 - 109-B1, 1 REAC ENCL COOLING WATER HI RADIATION

T= 10:15

- Chemistry reports the service water alarms are valid with the following readings
 - 6 times normal full power background (NFPB)

T= 11:17

- Chemistry reports the following service water rad monitor readings
 - 6.2 times normal full power background (NFPB)
- Chemistry reports that an analysis of the effluent shows a dose of 3 mRem TEDE for 60 minutes of exposure

Which of the following describes the component to isolate per S10.0.A, Service Water High Radiation, to reduce the radioactive input to service water, and the required EAL declaration if any?

| | <u>Component to isolate</u> | <u>EAL declaration</u> |
|----|--|------------------------|
| A. | The in-service RWCU NON-regen heat exchanger | UNUSUAL EVENT |
| B. | The in-service RWCU NON-regen heat exchanger | NONE |
| C. | The in-service RECW heat exchanger | UNUSUAL EVENT |
| D. | The in-service RECW heat exchanger | NONE |

Answer: C

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

The SRO candidate must determine that the SW rad monitor is a discharge permit specified monitor per OP-LG-1008 addendum 3, even though service water does not directly discharge to the river

A incorrect although RWCU is a cause for RECW hi rad, there are other possibilities (RWCU pp, recirc seal) as such the S10 procedure will direct removal of the in service RECW heat exchanger.

B incorrect although RWCU is a cause for RECW hi rad, there are other possibilities (RWCU pp, recirc seal) as such the S10 procedure will direct removal of the in service RECW heat exchanger. No EAL is plausible if the candidate does not recall that the service water rad monitor is a discharge permit specified monitor per OP-LG-1008 addendum 3

C correct candidate determine SW hi rad is a result of the RECW hi rad and correctly recalls S10.0.A step 4.7 isolate RECW heat exchanger and correctly determines UE for effluent monitor >2 times alarm value and that the service water rad monitor is a discharge permit specified monitor per OP-LG-1008 addendum 3

D incorrect plausible to examinee who miss uses EAL and or does not recognize that the service water rad monitor is a discharge permit specified monitor per OP-LG-1008 addendum 3

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 86 Info | |
|--------------------------|-----------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 2 |
| Difficulty: | 3.00 |
| System ID: | 1659209 |
| User-Defined ID: | Q# 86 NEW |
| Lesson Plan Objective: | LOT1710.08 |
| Topic: | SW rad |
| RO: | 2.9 |
| SRO: | 3.0 |
| KA#: | 400000 A2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | |
|---|---|--------|
| Level | SRO | |
| Tier | 2 | |
| Group | 1 | |
| KA # and Rating | 400000 A2.04 2.9/3.0 | |
| KA Statement | Component cooling water system (CCWS) Ability to (a) predict the impacts of the following on the CCWS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: Radiation monitoring system alarm | |
| Cognitive level | Higher | |
| Safety Function | 8 | |
| 10 CFR 55 | 43. 4, 5 | |
| Technical Reference with Revision No: | S13.0.B | Rev #: |
| Justification for Non SRO CFR Link: | n/a | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | |
| Question Source: (i.e. New, Bank, Modified) | New | |
| Low KA Justification (if required): | n/a | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | n/a | |
| ILT | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | EP-AA-10008 addendum 3 page 2-1 | |
| LORT | | |
| PRA: (i.e. Yes or No or #) | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

87

ID: 1455692

Points: 1.00

SRO

Unit 2 is operating at 100% power when the following alarms are received simultaneously:

- ARC-MCR-207-B2, SRV ACOUSTIC MONITOR POWER LOSS OR CABLE FAULT
- ARC-MCR-208-A5, OPRM/APRM TROUBLE
- ARC-MCR-208-D4, RBM DOWNSCALE/TROUBLE
- ARC-MCR-210-B2, SAFETY RELIEF VALVE OPEN
- ARC-MCR-221-F5, 2A APRM UPS INVERTER TROUBLE
- No other alarms were received on alarm panel 208

Given the above annunciators, which of the following is required?

- A. Insert an "A" RPS half SCRAM per OT-117, RPS Failure
- B. Isolate RWCU and enter Tech Spec. 3.6.3
- C. Enter OT-114, Inadvertent Opening Of A Relief Valve
- D. Enter ON-113, Loss Of RECW

Answer: A

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

The listed annunciators in the stem are expected for a loss of 2A-Y185 2A APRM UPS Power. Upon a loss of 2A-Y185 the appropriate Event procedure to enter is E-2AY185. Loss of power to 2AY185 will cause a loss of power to APRM voter units 1 and 3 causing a half scram

The Note prior to step 2.3 of E-2AY185 states:

- ARC-MCR-208, A1, "NEUTRON MONITORING SYSTEM TRIP"
- ARC-MCR-208, B1, "AUTO SCRAM CHANNEL A1"
- ARC-MCR-208, B2, "AUTO SCRAM CHANNEL A2"

Stem conditions state no other alarms were received on alarm panel 208, candidate must recognize an RPS failure occurred

Initial Action in step 2.3 states:

2.3 **IF** "A" RPS fails to actuate a HALF SCRAM condition **THEN ENTER** OT-117 "RPS Failures" **AND EXECUTE** concurrently.

Within OT-117, if there is a failure to half scam, step 3.2.1 directs inserting a manual half scram on the affected RPS side

Candidate is required to demonstrate an understanding of the difference between a loss of 2AY185 2A APRM UPS power and 2AY160 RPS UPS power.

Candidate must also recall actions required by E-2AY185/E-2AY160 and apply those actions to the given conditions. An RPS half SCRAM occurs on loss of either power supply where as a RWCU isolation only occurs on a loss of 2A-Y160.

- A Correct for the above reasons
- B Wrong - Plausible if the candidate confuses the expected plant response on the loss of 2A-Y185 and believes that a RWCU NSSSS Isolation should have occurred and did not and directs the RWCU system be isolated to comply with Tech Spec 3.6.3
- C Wrong - Plausible if the candidate recalls procedure E-2AY185 directs entering OT-114 (step 2.4) but does not recall that this step only applies if an SRV is confirmed to be open.
- D Wrong - Plausible if the candidate mis-diagnosis the event as a loss of 2AY-160 and recalls the first action step of E-2AY160 is to enter ON-113

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 87 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1455692 |
| User-Defined ID: | Q #87 NEW |
| Lesson Plan Objective: | LGSOPS0074A.11 |
| Topic: | SRO - Impact of Power supply degraded in APRM/LPRM System |
| RO: | 2.7 |
| SRO: | 3.1 |
| KA#: | 215005 A2.01 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|--------|------------------|
| Level | RO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 215005 A2.01 RO 2.7 SRO 3.1 | | |
| KA Statement | <p>215005 Average Power Range Monitor/Local Power Range Monitor</p> <p>A2. Ability to (a) predict the impacts of the following on the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:</p> <p>A2.01 Power supply degraded</p> | | |
| Cognitive level | High | | |
| Safety Function | 7 - Instrumentation | | |
| 10 CFR 55 | 43.5 | | |
| Technical Reference with Revision No: | E-2AY185 LLOT0071 | Rev #: | 0 0 1 2 |
| Justification for Non SRO CFR Link: | N/A | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | |
| Question Source: (i.e. New, Bank, Modified) | New | | |
| Low KA Justification (if required): | N/A | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | None | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

88

ID: 1455679

Points: 1.00

SRO

Unit 1 is in OPCON 4 with the following battery conditions:

| Battery | Float Current |
|---------|---------------|
| 1A1D101 | 2.6 |
| 1A2D101 | 2.1 |
| 1B1D101 | 0.8 |
| 1B2D101 | 1.6 |
| 1CD101 | 1.1 |
| 1DD101 | 1.2 |

WHICH ONE of the following:

(1) Identifies the battery, that if restored to Operable, would allow exiting Tech Spec LCO 3.8.2.2?

And

(2) Correctly completes the following about the design of the Class 1E batteries:

Each Class 1E battery bank is sized to have sufficient capacity without its charger to independently supply the large break LOOP/LOCA load profile for _____ (2) _____.

- A. (1) 1A1D101
(2) 1 hour
- B. (1) 1CD101
(2) 4 hours
- C. (1) 1A1D101
(2) 4 hours
- D. (1) 1CD101
(2) 1 hour

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Provide References: U1 Tech Spec 3.8.2.2

Candidate will assess the float current table and determine that there are 4 batteries INOP due to their float currents. 1A1D101 and 1A2D101 are both INOP due to exceeding 2 amps, 1CD101 and 1DD101 are both INOP due to exceeding 1 amp.

Tech Spec 3.8.2.2 LCO requires a minimum of two divisions to be Operable. This is not the case due to Div 1, 3, and 4 all being INOP due to associated battery float current limits being exceeded. Action b.2 applies to all 4 batteries and is the source of part 1 of the answer. If action b2 is successful for 1CD101, Unit 1 will now have two Operable divisions (Division 2 and Division 3) and LCO 3.8.2.2 may be exited. However, if action b2 is successful for 1A1D101, three divisions will remain INOP due to Div 1 remaining INOP due to battery 1A2D101 remaining INOP.

From LGS UFSAR section 8.3.2.1.1.2 Class 1E Batteries

Each Class 1E battery bank is sized to have sufficient capacity without its charger to independently supply the large break LOOP/LOCA load profile for 4 hours.

- A Wrong - Plausible to the candidate that mistakenly believes that restoring 1A1D101 to Operable status would result in Division 1 being restored to Operable and the candidate that applies the 1 hour duration associated with establishing an alternate AC Source described in SE-1 "Loss of all AC Power (Station Blackout)" Bases coping time from the Station Blackout Analysis.
- B Correct for the reasons stated above
- C Wrong - Plausible to the candidate that mistakenly believes that restoring 1A1D101 to Operable status would result in Division 1 being restored to Operable
- D Wrong - Plausible to the candidate that mistakenly applies the 1 hour duration associated with establishing an alternate AC Source described in SE-1 "Loss of all AC Power (Station Blackout)" Bases coping time from the Station Blackout Analysis.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 88 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 5 |
| Difficulty: | 2.00 |
| System ID: | 1455679 |
| User-Defined ID: | Q# 88 NEW |
| Lesson Plan Objective: | LGSOPS0095.9A |
| Topic: | (SRO ONLY) - Tech Spec - Shutdown with 3 DC Divisions INOP |
| RO: | 3.9 |
| SRO: | 4.0 |
| KA#: | 263000 G2.1.27 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|---|-------------------|
| Comments: | General Data | | |
| | Level | SRO | |
| | Tier | 3 | |
| | Group | N/A | |
| | KA # and Rating | 263000 G2.1.27 RO-3.9 SRO - 4.0 | |
| | KA Statement | 263000 D.C. Electrical Distribution 2.1.27 Knowledge of system purpose and/or function | |
| | Cognitive level | High | |
| | Safety Function | 6 - Electrical | |
| | 10 CFR 55 | 55.43 (2) Facility operating limitations in the technical specification and their bases | |
| | Technical Reference with Revision No: | Tech Spec 3.8.2.2 UFSAR 8.3.2.1.1.2 | Rev #: |
| | Justification for Non SRO CFR Link: | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | |
| | Question Source: (i.e. New, Bank, Modified) | New | |
| | Low KA Justification (if required): | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | Tech Spec 3.8.2.2 | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |
| 1248501 | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

89

ID: 1455217

Points: 1.00

SRO

Unit 1 is in OPGON 2 with reactor startup in progress.

All IRM's are on Range 6 and reading as follows:

- "A" 22 / 125
- "B" 24 / 125
- "C" 31 / 125
- "D" 24 / 125
- "E" 55 / 125
- "F" 54 / 125
- "G" 33 / 125
- "H" 31 / 125

- The RO ranges up IRMs B,C,G, and H to range 7 and
- The A,D,E and F IRMs are inadvertently ranged up to range 8 and the RO continues to pull control rods.

WHICH of the following identifies (1) all of the INOP IRMs AND (2) the required Tech Spec actions?

- A. (1) A AND D
(2) Place an A side Half SCRAM in within 12 hours
- B. (1) A, D, E, AND F
(2) Place a ROD BLOCK in within 12 hours
- C. (1) A AND D
(2) Startup may continue
- D. (1) A, D, E, AND F
(2) Place a ROD BLOCK in within 8 hour

Answer: C

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

A and D IRM are INOP for rod block instrumentation TS 3.3.6. G and H are only up ranged 1 time so no downscale rod block exist on them. Stem indicates the RO continues to pull rods after A and D IRM are $< 3/125$ of scale rod block should be generated

Ranging from 6 to 7 will divide all readings by 3.16. A,D,E,F are ranged to 8 which will divide the reading by 3.16 again which will result in A and D IRM reading less than $3/125$ ths of scale which will result in a rod block. operators continue to pull control rods rod block must have not come in. Since only 6 IRMs are required for both RPS and Rod Block 1 IRM may be bypassed on each side. A and D IRM may be bypassed and startup may continue.

A incorrect plausible to candidate who believes an IRM downscale will generate a 1/2 scram

B incorrect plausible to the examinee who correctly identifies that a ROD block should have been generated but does not recall the required number of IRM required per TS

C Correct A and D IRM INOP for Rod Block function but 6 IRMs remain operable, startup may continue

D incorrect plausible to the examinee who correctly identifies that a ROD block should have been generated but does not recall the required number of IRM required per TS and incorrectly believes B IRM is INOP

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 89 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------------|--|-------|-----|------|---|-------|---|-----------------|-----------------------|--------------|---|-----------------|--------|-----------------|---|-----------|------|---------------------------------------|--------|-------------------------------------|-----|--|-----|---|-----|-------------------------------------|-----|---|-----|-----|--|--|------|------|--|----------------------------|--|---|--|----------|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455217 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 89 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS0074.24A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SRO Unit 1 is in OPCON 2 with reactor startup in progress. All IRMs are on Range 6 and reading | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 215003 2.2.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="2">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td>SRO</td> </tr> <tr> <td>Tier</td> <td>2</td> </tr> <tr> <td>Group</td> <td>1</td> </tr> <tr> <td>KA # and Rating</td> <td>215003 2.2.40 3.4/4.7</td> </tr> <tr> <td>KA Statement</td> <td>Ability to apply Technical Specifications for a system.</td> </tr> <tr> <td>Cognitive level</td> <td>higher</td> </tr> <tr> <td>Safety Function</td> <td>7</td> </tr> <tr> <td>10 CFR 55</td> <td>43.2</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>Rev #:</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td>n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td>new</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td>new</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td>n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td>new</td> </tr> <tr> <th colspan="2">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td>none</td> </tr> <tr> <th colspan="2">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td></td> </tr> <tr> <td>Comments</td> <td></td> </tr> </tbody> </table> | General Data | | Level | SRO | Tier | 2 | Group | 1 | KA # and Rating | 215003 2.2.40 3.4/4.7 | KA Statement | Ability to apply Technical Specifications for a system. | Cognitive level | higher | Safety Function | 7 | 10 CFR 55 | 43.2 | Technical Reference with Revision No: | Rev #: | Justification for Non SRO CFR Link: | n/a | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | Question Source: (i.e. New, Bank, Modified) | new | Low KA Justification (if required): | n/a | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | ILT | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | LORT | | PRA: (i.e. Yes or No or #) | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | Comments | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 215003 2.2.40 3.4/4.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Ability to apply Technical Specifications for a system. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | Rev #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

90

ID: 1454750

Points: 1.00

SRO

A turbine trip with failure of bypass valves to open occurred on unit 1. After the event the plant is being prepared for startup.

Engineering reports the SRV's lifted at the following pressures during the transient.

| SRV | Lift set point | Lifted at | | SRV | Lift set point | Lifted at | | SRV | Lift set point | Lifted at |
|-----|----------------|-----------|--|-----|----------------|-----------|--|-----|----------------|-----------|
| H | 1170 | 1175 | | D | 1180 | 1180 | | A | 1190 | 1190 |
| J | 1170 | 1160 | | E | 1180 | 1218 | | B | 1190 | 1188 |
| L | 1170 | 1159 | | K | 1180 | 1181 | | C | 1190 | 1190 |
| N | 1170 | 1133 | | M | 1180 | 1183 | | F | 1190 | 1153 |
| | | | | S | 1180 | 1190 | | G | 1190 | 1230 |

Maintenance reports there are 3 spare SRV's with a lift set point of 1170 available on site

Procurement reports that it will take 2 weeks to secure 1 additional SRV, AND 3 weeks to secure a second additional SRV.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

REACTOR COOLANT SYSTEM

3/4.4.2 SAFETY/RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.2 The safety valve function of at least 12 of the following reactor coolant system safety/relief valves shall be OPERABLE with the specified code safety valve function lift settings:##

- 4 safety/relief valves @ 1170 psig $\pm 3\%$
- 5 safety/relief valves @ 1180 psig $\pm 3\%$
- 5 safety/relief valves @ 1190 psig $\pm 3\%$

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With the safety valve function of one or more of the above required safety/relief valves inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. DELETED
- c. DELETED

SURVEILLANCE REQUIREMENTS

4.4.2.1 DELETED

4.4.2.2 At least 1/2 of the safety relief valves shall be removed, set pressure tested and reinstalled or replaced with spares that have been previously set pressure tested and stored in accordance with manufacturer's recommendations in accordance with the Surveillance Frequency Control Program, and they shall be rotated such that all 14 safety relief valves are removed, set pressure tested and reinstalled or replaced with spares that have been previously set pressure tested and stored in accordance with manufacturer's recommendations in accordance with the Surveillance Frequency Control Program. All safety valves will be recertification tested to meet a $\pm 1\%$ tolerance prior to returning the valves to service.

* The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures.

Up to 2 inoperable valves may be replaced with spare OPERABLE valves with lower setpoints until the next refueling.

Of the choices below which one of the following will allow the mode switch to be placed in startup the earliest?

- A. After SRV replacement with onsite spare SRV's, a risk assessment **IS NOT** required
- B. After SRV replacement with onsite spare SRV's, a risk assessment **IS** required
- C. After procurement of an additional SRV with a lift set point of 1180
- D. After procurement of 2 additional SRV's with a lift set point of 1190

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer: A

Answer Explanation

Per T.S 3.4.2 SRV set point acceptable tolerance is +/- 3% examinee must determine that N,E,F,& G are outside of 3% and inoperable

Per T.S 3.4.2 only 12 of 14 are required

Per the # note up to 2 SRV's may be replaced with lower set point SRV until the next refuel outage

SRO must recall TS 3.0.4.b requirements for when a risk assessment is required without reference

- A Correct replacing the N SRV and any 2 other SRV's will meet the requirements of T.S 3.4.2 using # note up to 2 SRV's may be replaced with lower set point SRV until the next refuel outage
- B Incorrect plausible to the examinee who does not recognize the # note and believe that using lower setpoint SRV could be used with a risk assessment
- C Incorrect plausible to the examinee who does not apply note # but does recognize that only 12 SRV's are needed
- D Incorrect plausible to the examinee who does apply the note # but does recognize that only 12 SRV's are required

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 90 Info | |
|--------------------------|----------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 4.00 |
| System ID: | 1454750 |
| User-Defined ID: | Q# 90 NEW |
| Lesson Plan Objective: | LGSOPS1800.5B |
| Topic: | SRO SRV hi rector pressure |
| RO: | 4.1 |
| SRO: | 4.3 |
| KA#: | 239002 A2.06 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | | |
|---|---|--------|-----|
| Level | SRO | | |
| Tier | 2 | | |
| Group | 1 | | |
| KA # and Rating | 239002 A2.06 4.1/4.3 | | |
| KA Statement | Relief/Safety Valves Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Reactor high pressure | | |
| Cognitive level | higher | | |
| Safety Function | 3 | | |
| 10 CFR 55 | 43.2 | | |
| Technical Reference with Revision No: | T.S 3.4.2 | Rev #: | 186 |
| Justification for Non SRO CFR Link: | n/a | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| Question Source: (i.e. New, Bank, Modified) | new | | |
| Low KA Justification (if required): | n/a | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| ILT | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | T.S 3.4.2 imbedded | | |
| LORT | | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

91

ID: 1453648

Points: 1.00

SRO ONLY

Unit 2 is operating at 100% power.

Multiple cell failures on the 'A' ASD results in the following Recirc indications:

| | <u>'A' Recirc</u> | <u>'B' Recirc</u> |
|-----------|-------------------|-------------------|
| Loop Flow | 28 Mlbm/hr | 45 Mlbm/hr |

WHICH ONE of the following is the maximum allowable 'B' Recirc loop flow that will satisfy Tech Specs 3.4.1.3, and the Basis for the Tech Spec Recirc flow mismatch limitations? (Assume 'A' flow remains constant)

| | <u>HIGHEST 'B' Recirc flow value that will satisfy Tech Specs</u> | <u>Basis for Tech Spec Recirc flow mismatch limitations</u> |
|----|---|---|
| A. | 33 Mlbm/hr | Prevents undue stress on the vessel nozzles and bottom head region |
| B. | 38 Mlbm/hr | Prevents undue stress on the vessel nozzles and bottom head region |
| C. | 33 Mlbm/hr | Ensure an adequate core flow coastdown from either recirc loop following a LOCA |
| D. | 38 Mlbm/hr | Ensure an adequate core flow coastdown from either recirc loop following a LOCA |

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

D: 38 Mlbm/hr, Ensure an adequate core flow coastdown from either recirc loop following a LOCA is correct. Refer to Tech Spec 3.4.1.3 action a which states "Recirculation loop flow mismatch shall be maintained: a. Within 5% of each other with core flow greater than or equal to 70% of rated core flow, or b. within 10% of each other with core flow less than 70% of rated core flow. From the daily ST, ST-6-107-590-2, Note 1 on page 85, (Rev. 134) states "If core flow < 70%, THEN VERIFY DIFFERENCE \leq 10 Mlbm/hr OR IF \geq 70%, THEN VERIFY DIFFERENCE \leq 5Mlbm/hr. Therefore, when 'B' Recirc flow is reduced to 38 Mlbm/hr, total core flow will be less than 70% and the 10 Mlbm/hr flow mismatch requirement will be met.

A: 33 Mlbm/hr, Prevents undue stress on the vessel nozzles and bottom head region is incorrect. This reduction is sufficient to meet the required 10% flow mismatch (actual value is 5% not the highest allowable value) The basis of the flow mismatch Tech Spec is wrong but plausible due to it actually being the basis for recirc loop temperature difference prior to a start of an idle recirc pump.

B: 38 Mlbm/hr, Prevents undue stress on the vessel nozzles and bottom head region is incorrect. The basis of the flow mismatch Tech Spec is wrong but plausible due to it actually being the basis for recirc loop temperature difference prior to a start of an idle recirc pump.

C: 33 Mlbm/hr, Ensure an adequate core flow cooldown from either recirc loop following a LOCA is incorrect. This reduction is sufficient to meet the required 10% flow mismatch (actual value is 5% not the highest allowable value)

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 91 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 4 |
| Difficulty: | 3.00 |
| System ID: | 1453648 |
| User-Defined ID: | Q# 91 BANK |
| Lesson Plan Objective: | LGSOPS1800.5B |
| Topic: | (SRO) Recall Tech Spec 3.4.1.3 SR requirements for Recirc Flow mismatch |
| RO: | 3.0 |
| SRO: | 3.2 |
| KA#: | 202002 A2.04 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Comments:

| General Data | | |
|---|--|--------|
| Level | SRO | |
| Tier | 2 | |
| Group | 2 | |
| KA # and Rating | 202002 A2.04 3.0/3.2 | |
| KA Statement | <p>Ability to (a) predict the impacts of the following on the RECIRCULATION FLOW CONTROL SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Recirculation pump speed mismatch between loops: Plant-Specific</p> | |
| Cognitive level | higher | |
| Safety Function | 1 | |
| 10 CFR 55 | 43.2 | |
| Technical Reference with Revision No: | Tech spec 3.4.1.3 and bases | Rev #: |
| Justification for Non SRO CFR Link: | n/a | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank | |
| Question Source: (i.e. New, Bank, Modified) | Modified | |
| Low KA Justification (if required): | n/a | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | modified after 2015 cert | |
| ILT | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| LORT | | |
| PRA: (i.e. Yes or No or #) | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | Also 295001 2.2.12 3.7/4.1 | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

92

ID: 1454490

Points: 1.00

SRO

Unit 1 is operating at 100% power when a LOCA occurs
Plant conditions are as follows;

- Drywell pressure is 14 psig
- Drywell temperature is 248 degrees
- Reactor level is -140 inches up slow with HPCI
- Suppression pool level is 42 feet
- D12 bus lockout occurs
- D13 load center breaker trips and cannot be reclosed

Which of the following describes (1) the T-225 action to be taken by the CRS and (2) whether local manual operation, outside the MCR, of RHRSW Heat Exchanger Inlet and/or Outlet Valve(s) is required to complete the action?

- A. (1) Spray the Drywell
(2) No
- B. (1) Spray the Suppression Pool
(2) No
- C. (1) Spray the Drywell
(2) Yes
- D. (1) Spray the Suppression Pool
(2) Yes

Answer: D

Answer Explanation

- A Incorrect plausible to examinee who does not diagnose >37.4 feet suppression pool level, and that drywell spray is prohibited per PC/P-10 of T-102. plausible to the examinee who does not recall that Div 3 power supplies the A RHR htx outlet valve.
- B Incorrect plausible to the examinee who does not recall that Div 3 power supplies the A RHR htx outlet valve.
- C Incorrect plausible to examinee who does not diagnose >37.4 feet suppression pool level, and that drywell spray is prohibited per PC/P-10 of T-102.
- D Correct examinee recognizes safe to spray but realizes suppression pool level is too high to spray the Drywell and directs pool spray. With a loss of D13 load center the A RHRSW outlet valve to the RHR HTX has no power and must be opened manually. S12.1.A which is directed from T-225 includes direction for manual operation of RHRSW valves if required.

Q #92 deleted
Ans 2/15/17

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 92 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|---|--------------|--|--|--|-------|-----|--|--|------|---|--|--|-------|---|--|--|-----------------|-----------------------|--|--|--------------|---|--|--|-----------------|--------|--|--|-----------------|---|--|--|-----------|------|--|--|---------------------------------------|-----------------|--------|---|-------------------------------------|-----|--|--|--|-----|--|--|---|-----|--|--|-------------------------------------|-----|--|--|---|-----|--|--|-----|--|--|--|---|--|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1454490 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 92 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS1560.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SRO FLR action cont. SPRAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 226001 2.4.35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">SRO</td> </tr> <tr> <td>Tier</td> <td colspan="3">2</td> </tr> <tr> <td>Group</td> <td colspan="3">2</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">226001 2.4.35 3.8/4.0</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">RHR/LPCI: Containment Spray System Mode Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">Higher</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">5</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">43.5</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>E11-1040 sht 15</td> <td>Rev #:</td> <td>1</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">new</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">new</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">new</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-#)</td> <td colspan="3"></td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | SRO | | | Tier | 2 | | | Group | 2 | | | KA # and Rating | 226001 2.4.35 3.8/4.0 | | | KA Statement | RHR/LPCI: Containment Spray System Mode Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects. | | | Cognitive level | Higher | | | Safety Function | 5 | | | 10 CFR 55 | 43.5 | | | Technical Reference with Revision No: | E11-1040 sht 15 | Rev #: | 1 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | Question Source: (i.e. New, Bank, Modified) | new | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-#) | | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 226001 2.4.35 3.8/4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | RHR/LPCI: Containment Spray System Mode Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | Higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | E11-1040 sht 15 | Rev #: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-#) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

93

ID: 1454412

Points: 1.00

SRO

Plant conditions are as follows:

Unit 1

- Reactor power is 100%
- RWCU resin spill has occurred in the Reactor Enclosure (RE)
- RE HVAC Exhaust radiation level is 11 mR/hr
- RWCU 'A' Pump Room radiation level is 120 mR/hr
- RWCU Regen Heat Exchanger Room radiation level is 122 mR/hr

Access to Unit 1 Reactor Enclosure is required.

Unit 2

- OPCON 5 Drywell purge in progress

WHICH ONE of the following identifies

(1) the T-103 action required for Unit 1?

(2) the status of Unit 2 drywell purge?

- A. (1) Restore Reactor Enclosure HVAC per T-103 Secondary Containment Control, Step SCC/T-3
(2) Isolated
- B. (1) Restore Reactor Enclosure HVAC per T-103 Secondary Containment Control, Step SCC/T-3
(2) In service
- C. (1) Ensure Reactor HVAC isolation and SGTS initiation per T-103 Secondary Containment Control, Step SCC-4
(2) Isolated
- D. (1) Ensure Reactor HVAC isolation and SGTS initiation per T-103 Secondary Containment Control, Step SCC-4
(2) In service

Answer: C

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

- A Incorrect The SRO candidate must demonstrate TRIP step knowledge by understanding SCC/T-3 only applies if reactor enclosure rad is < 1.35 mR/H plausible if the examinee does not recall requirement for rad to be below 1.35 or confuses this with T-104 RR-3 which allows start of REFUEL HVAC regardless for rad if entry is required
- B Incorrect At >1.35 mR/H reactor HVAC will isolate and SBGT will start and Isolate unit 2 purge. The SRO candidate must demonstrate TRIP step knowledge by understanding SCC/T-3 only applies if reactor enclosure rad is < 1.35 mR/H plausible if the examinee does not recall requirement for rad to be below 1.35 or confuses this with T-104 RR-3 which allows start of REFUEL HVAC regardless for rad if entry is required
- C Correct At >1.35 mR/H reactor HVAC will isolate and SBGT will start and Isolate unit 2 purge. Ensure Reactor HVAC isolation and SGTS initiation per T-103 Secondary Containment Control, Step SCC-4
- D Incorrect At >1.35 mR/H reactor HVAC will isolate and SBGT will start and Isolate unit 2 purge..

T-104 RR-3

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 93 Info | |
|--------------------------|-------------------------|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 3.00 |
| System ID: | 1454412 |
| User-Defined ID: | Q# 93 NEW |
| Lesson Plan Objective: | LGSOPS1560.06 |
| Topic: | SRO Reactor encl hi rad |
| RO: | 3.4 |
| SRO: | 3.6 |
| KA#: | 290001 A2.03 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|--|--|--|---------------|--------|
| Comments: | General Data | | | |
| | | | | |
| | Level | SRO | | |
| | Tier | 2 | | |
| | Group | 2 | | |
| | KA # and Rating | 290001 A2.03 3.4/3.6 | | |
| | KA Statement | Secondary Containment Ability to (a) predict the impacts of the following on the SECONDARY CONTAINMENT ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High area radiation | | |
| | Cognitive level | higher | | |
| | Safety Function | 5 | | |
| | 10 CFR 55 | 43.4 & 43.5 | | |
| | Technical Reference with Revision No: | T-103 | Rev #: | 2 3 |
| | Justification for Non SRO CFR Link: | n/a | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | new | | |
| | Question Source: (i.e. New, Bank, Modified) | new | | |
| | Low KA Justification (if required): | n/a | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | new | | |
| | ILT | | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

94

ID: 1455644

Points: 1.00

SRO

A large fire is burning at the 2C Main Power Transformer. What are the SE-8 "Fire" requirements for controlling access of an offsite fire department?

The offsite fire department is to be escorted by _____

- A. Radiation Protection
- B. any Fire Brigade Member qualified Equipment Operator
- C. a Fire Brigade Leader qualified Equipment Operator
- D. Plant Security

Answer: D

Answer Explanation

At Limerick most Equipment operators are fire brigade qualified and any Equipment operator with more than 6 months in position is leader qualified as such there is an abundance of fire brigade / leader qualified people on site to support choices B and C

- A Wrong - Plausible to the examinee who recalls that RadPro responds to Fires within the Protected Area Boundary and translates this into they would be responsible to escort the responding fire department. For fires within the Protected Area Boundary that do not contain a radiological concern (as is the case for this fire at the Main Power Transformer), the RP response (SE-8 section 4.12) parallels that of a EMT for the Fire Brigade Members.
- B Wrong - Plausible if the examinee assumes that the Offsite Fire Department should be escorted by an individual knowledgeable in the equipment locations in the plant and fire fighting techniques.
- C Wrong - Plausible if the examinee assumes that the Offsite Fire Department should be escorted by an individual in charge of fire fighting activities
- D Correct - SE-8 "Fire" Shift Supervisor Response section step 4.8.5.6 has the SRO request plant security to escort offsite Fire Departments

Applicable to SROs and NOT General Employee Knowledge due to Licensed Operators having sole responsibility to direct actions from procedure SE-8 "Fire"

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 94 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1455644 |
| User-Defined ID: | Q# 94 NEW |
| Lesson Plan Objective: | LLOT1563.04 (E/SE PROCEDURES) |
| Topic: | SRO - requirements for controlling vital/ controlled access |
| RO: | |
| SRO: | 3.2 |
| KA#: | 2.1.13 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|---|---|---|-----------|
| Comments: | General Data | | |
| | Level | SRO | |
| | Tier | 3 | |
| | Group | N/A | |
| | KA # and Rating | 2.1.13 SRO Importance SRO 3.2 | |
| | KA Statement | Knowledge of facility requirements for controlling vital/controlled access. | |
| | Cognitive level | Low | |
| | Safety Function | N/A | |
| | 10 CFR 55 | 43.5 | |
| | Technical Reference with Revision No: | SE-8 | Rev #: 54 |
| | Justification for Non SRO CFR Link: | Applicable to SROs and NOT General Employee Knowledge due to Licensed Operators having sole responsibility to direct actions from procedure SE-8 "Fire" | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | |
| | Question Source: (i.e. New, Bank, Modified) | New | |
| | Low KA Justification (if required): | N/A | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | None | |
| | LORT | | |
| PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

95

ID: 1455601

Points: 1.00

SRO

Given the following:

- Unit 2 is operating at 85% power
- The 2B Reactor Feed Pump (RFP) has been experiencing fluctuating speed changes
- To support trouble shooting, I&C is requesting to connect a strip chart recorder to monitor the signal to the Woodward Governor for the 2B RFP
- The strip chart recorder will be attached to existing test points in the system

Refer to Attachment 4 "Risk and Rigor Determination Matrix" of MA-AA-716-004 "Conduct of Troubleshooting" to classify this activity

This is a ____ (1) ____ Risk troubleshooting activity, and requires Operations Department approval by the ____ (2) ____.

- A. (1) High
(2) Shift Manager
- B. (1) High
(2) Work Control Supervisor
- C. (1) Medium
(2) Shift Manager
- D. (1) Medium
(2) Work Control Supervisor

Answer: B

Answer Explanation

- A Wrong - plausible if the student confuse the risk category of With test points (C) with that of without test points (A) Shift manager required approval
- B Correct - This is High Risk Troubleshooting per MA-AA-716-004 Attachment 4 due to DFLCS and the Woodward Governor being control systems that directly involve power generation support (1.2) and being Logic systems that can directly or indirectly cause a reactor scram (1.3). The risk category is C due to hooking up the recorder using existing test points. This requires the WCS approval
- C Wrong - plausible if the student confuse the risk level classification as Medium due to mis applying 2.3 as Level control changes in the reactor and confuses the risk category of With test points (C) with that of without test points (A) (shift manager required approval
- D Wrong - plausible if the student confuse the risk level classification as Medium due to mis applying 2.3 as Level control changes in the reactor.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 95 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|--------|--------------|--|--|--|-------|-----|--|--|------|---|--|--|-------|-----|--|--|-----------------|---------------------------|--|--|--------------|--|--|--|-----------------|------|--|--|-----------------|-----|--|--|-----------|------|--|--|---------------------------------------|---------------|--------|--------|-------------------------------------|-----|--|--|--|-------------------------------------|--|--|---|-------------------------------------|--|--|-------------------------------------|-----|--|--|---|--|--|--|-----|--|--|--|--|----------------------------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1455601 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q #95 MODIFIED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LGSOPS2005A 6.B (ADMIN PROCED) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 3.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.2.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">SRO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3">N/A</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.2.20 Importance SRO 3.8</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Knowledge of the process for managing troubleshooting activities</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">High</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">N/A</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">43.5</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>MA-AA-716-004</td> <td>Rev #:</td> <td>1 3</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">N/A</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">Modified PBAPS 2008 ILT NRC SRO #21</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">Modified PBAPS 2008 ILT NRC SRO #21</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">N/A</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3"></td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">MA-AA-716-004 Attachment 4</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | SRO | | | Tier | 3 | | | Group | N/A | | | KA # and Rating | 2.2.20 Importance SRO 3.8 | | | KA Statement | Knowledge of the process for managing troubleshooting activities | | | Cognitive level | High | | | Safety Function | N/A | | | 10 CFR 55 | 43.5 | | | Technical Reference with Revision No: | MA-AA-716-004 | Rev #: | 1 3 | Justification for Non SRO CFR Link: | N/A | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Modified PBAPS 2008 ILT NRC SRO #21 | | | Question Source: (i.e. New, Bank, Modified) | Modified PBAPS 2008 ILT NRC SRO #21 | | | Low KA Justification (if required): | N/A | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | MA-AA-716-004 Attachment 4 | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.2.20 Importance SRO 3.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Knowledge of the process for managing troubleshooting activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | MA-AA-716-004 | Rev #: | 1 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | Modified PBAPS 2008 ILT NRC SRO #21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | Modified PBAPS 2008 ILT NRC SRO #21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | MA-AA-716-004 Attachment 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

96

ID: 1685046

Points: 1.00

SRO

Given the following:

- A loss of coolant accident has occurred
- T-101, RPV Control, and T-102, Primary Containment Control, have been entered
- SE-10, LOCA, has been entered
- 3 hours have elapsed since the LOCA signal
- Plant operators have arrived at the following SE-10 step:

4.25 **WHEN** greater than three hours have elapsed following the LOCA signal,
THEN INJECT SLC per S48.1.B, Standby Liquid Control System Manual Initiation. **(CM-4)**

WHICH ONE of the following describes the basis for performance of this step?

- A. Provides an additional source of injection to the reactor to help recover RPV water level
- B. Ensures sufficient negative reactivity is present to ensure reactor remains shutdown due to changes in core geometry
- C. Ensures Hot Shutdown Boron Weight is injected before suppression pool temperature exceeds the Heat Capacity Temperature Limit
- D. Minimizes radioactive release by adding sodium pentaborate to the suppression pool to satisfy the methodology for Alternate Source Term

Answer: D

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

K&A Rating: G2.3.14 (3.8)

K&A Statement: **Knowledge of radiation or contamination hazards that may arise during normal, abnormal or emergency conditions or activities**

Justification:

- A. Incorrect but plausible: Establishing SLC injection in 4.25 is not as a means for level control but as a means to control radiological dose following a loss of coolant accident involving core damage. Since SLC is identified as an Alternate Injection System it would likely be started to augment RPV injection in an earlier step of the Level branch, before RPV water level reaches the top of the active fuel. This is a plausible distracter for those candidates that do not recognize the radiological impact from SLC injection once TAF has been reached and also plausible for level control as injection requirements 3 hours after shutdown are much lower and closer to the capacity of the SLC pumps
- B. Incorrect but plausible: Boration of the reactor coolant is performed to reduce power levels in the core by neutron moderation. This is plausible distracter for those candidates who believe that dose mitigation is achieved with boration of the coolant in the vessel versus the Suppression Pool volume
- C. Incorrect but plausible: to the examinee who mistakes the basis for this injection with the basis for injecting SLC prior to Suppression Pool Temperature exceeded 110 degrees F from T-101 Step RC/Q-16
- D. Correct: Design basis analyses credit SLC injection for limiting the radiological dose following loss of coolant accidents involving core damage. Radiation induced reactions are predicted to convert large fractions of dissolved ionic iodine into elemental iodine and organic iodides which can escape into the containment atmosphere. The rate of these reactions is strongly dependent on suppression pool pH. If the bulk Suppression Pool pH is maintained greater than 7, very little of the dissolved iodine will be converted to volatile forms and most of the iodine fission products will be retained in the suppression pool, thereby preventing iodine re-evolution. Over time, the pH in the Suppression Pool will tend to lower due to the addition of acidic chemicals. The sodium pentaborate solution used in the SLC system is derived from a strong base and therefore raises suppression pool pH

References: SE-10, Rev. 56
UFSAR Section 9.3.5, Rev. 15
S48.1.B, Rev. 13
LLOT0048, Rev. 0
TS Bases 3/4.1.5, amendment 186

Applicant Ref: None

Learning Objective: LLOT0048: IL1, IL10
LLOT1563: 03

Question source: Bank NMP 8/2009

Question History: Not used on 2008 or 2010 LGS
initial exams

Cognitive level: Memory/Fundamental knowledge: X
Comprehensive/Analysis:

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

10CFR Part 55: 43(b)(4), 43(b)(1)

Comments: This question is SRO only as it requires knowledge of administrative procedures that specify implementation and coordination of plant emergency procedures regarding radiation hazards that may arise during abnormal plant conditions and knowledge of conditions and limitations in the facility license.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 96 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1685046 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 96 BANK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | POOL PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 3.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.3.14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">SRO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3">N/A</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.3.14</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Knowledge of radiation or contamination hazards that may arise during normal, abnormal or emergency conditions or activities</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">lower</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">n/a</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">43(b)(4), 43(b)(1)</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>SE-10</td> <td>Rev #:</td> <td>6 1</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">bank 2012 lgs NRC</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">bank</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">bank</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | SRO | | | Tier | 3 | | | Group | N/A | | | KA # and Rating | 2.3.14 | | | KA Statement | Knowledge of radiation or contamination hazards that may arise during normal, abnormal or emergency conditions or activities | | | Cognitive level | lower | | | Safety Function | n/a | | | 10 CFR 55 | 43(b)(4), 43(b)(1) | | | Technical Reference with Revision No: | SE-10 | Rev #: | 6 1 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 2012 lgs NRC | | | Question Source: (i.e. New, Bank, Modified) | bank | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.3.14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Knowledge of radiation or contamination hazards that may arise during normal, abnormal or emergency conditions or activities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | lower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43(b)(4), 43(b)(1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | SE-10 | Rev #: | 6 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 2012 lgs NRC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

97

ID: 1685033

Points: 1.00

SRO

LGS has declared a GENERAL EMERGENCY.

Command & Control has been transferred to the TSC.

Consider the following ERO personnel:

1. Shift Manager / Shift Emergency Director
2. Radiation Protection Manager
3. Station Emergency Director

WHICH ONE of the following identifies (from the above list) **ALL** of those who can **APPROVE** an "Authorization for Emergency Exposure" form for a worker to receive exposure greater than 25 Rem TEDE?

- A. 1, 3
- B. 2, 3
- C. 2
- D. 3

Answer: D

Answer Explanation

Refer to EP-AA-113-F-02 (Authorization for Emergency Exposure). The Shift Manager / Shift Emergency Director may approve prior to transferring Command and Control to the Station Emergency Director. After the transfer of command and control, only the Station Emergency Director can approve the emergency exposure.

'D' is correct: 3. Correct for the reasons described above.

'A' is wrong: 1, 3. Plausible to the examinee who recognizes that the Shift Manager is always the initial "Emergency Director" and so believes that he/she can still approve the exposure even after transferring command and control.

'B' is wrong: 2, 3. Plausible to the examinee who recalls that the Radiation Protection Manager (RPM) is involved in the process (as shown on EP-AA-113-F-02) but who forgets that the RPM only "reviews" the exposure request; he/she cannot approve the request. The RPM can approve emergency exposure if they are less than 5 Rem TEDE (EP-AA-113 4.3.1.3)

'C' is wrong: 2. Plausible to the examinee who recognizes that the Station Emergency Director has overall command and control of the ERO, but who believes that the expertise that only the RPM possesses is necessary to ultimately approve the exposure request.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 97 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--------|--|--------------|--|--|--|-------|-----|--|--|------|---|--|--|-------|-----|--|--|-----------------|----------------|--|--|--------------|---|--|--|-----------------|--------|--|--|-----------------|-----|--|--|-----------|------|--|--|---------------------------------------|-----------|--------|--|-------------------------------------|-----|--|--|--|-----------------------|--|--|---|--|--|--|-------------------------------------|-----|--|--|---|--|--|--|-----|--|--|--|--|------|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1685033 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 97 BANK 2015 NRC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | EAL OBJECTIVES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | (SRO) Recall who can Approve an Emergency Exposure request | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 2.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 4.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.4.38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">SRO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3">n/a</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.4.38 2.4/4.4</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Ability to take actions called for in the facility emergency plan, including supporting or acting as emergency coordinator if required.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">higher</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">n/a</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">43.5</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>EP-AA-113</td> <td>Rev #:</td> <td></td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">bank 1150031 2015 NRC</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3"></td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3"></td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3">none</td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | SRO | | | Tier | 3 | | | Group | n/a | | | KA # and Rating | 2.4.38 2.4/4.4 | | | KA Statement | Ability to take actions called for in the facility emergency plan, including supporting or acting as emergency coordinator if required. | | | Cognitive level | higher | | | Safety Function | n/a | | | 10 CFR 55 | 43.5 | | | Technical Reference with Revision No: | EP-AA-113 | Rev #: | | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 1150031 2015 NRC | | | Question Source: (i.e. New, Bank, Modified) | | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.4.38 2.4/4.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Cognitive level | higher | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | EP-AA-113 | Rev #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank 1150031 2015 NRC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | none | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

98

ID: 1454851

Points: 1.00

SRO

Given the following:

Unit 2 is operating at 100% power

- I&C is performing ST-2-072-104-1 "DIV IV NSSSS LSF/SAA"
- 111 RECIRC-E5 NSSSS Isolation Sys Out Of SERVICE (Outboard), has repeatedly alarmed due to the surveillance test
- The CRS determined the alarm to be a nuisance and authorized placing the annunciator mode switch in MANUAL
- The ST did NOT provide steps for changing the annunciator mode switch position

Which one of the following describes the action required by OP-AA-103-102 "Watch-Standing Practices" AND OP-LG-103-102-1001 "Alarms And Indications" for these conditions?

An ____ (1) ____ must be used if the annunciator mode switch is in manual greater than ____ (2) ____.

- A. (1) Equipment Status Tag (EST) (2) 1 hour
- B. (1) Equipment Status Tag (EST) (2) 1 shift
- C. (1) Equipment Deficiency Tag (EDT) (2) 1 hour
- D. (1) Equipment Deficiency Tag (EDT) (2) 1 shift

Answer: B

Answer Explanation

Correct: B For nuisance alarms, OP-AA-103-102 requires use of an EST if the annunciator mode switch will be in manual for greater than 1 shift. If the test procedure gives direction for controlling the annunciator mode switch, an EST is not required.

Distractors:

A Correct tag; wrong time.

C Incorrect tag; incorrect time. Plausible because an EDT is used in cases where an annunciator alarms (and an alarm condition does NOT exist) due to an equipment/instrumentation failure. The applicant may confuse the specific cases involving annunciators when an EST is used versus an EDT.

D Incorrect tag; correct time. Plausible because an EDT is used in cases where an annunciator alarms (and an alarm condition does NOT exist) due to an equipment/instrumentation failure. The applicant may confuse the specific cases involving annunciators when an EST is used versus an EDT.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 98 Info | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------|---|--------------|--|--|--|-------|-----|--|--|------|---|--|--|-------|-----|--|--|-----------------|----------------|--|--|--------------|---|--|--|-----------------|-------|--|--|-----------------|-----|--|--|-----------|------|--|--|---------------------------------------|--------------------|--------|---|-------------------------------------|-----|--|--|--|------|--|--|---|------|--|--|-------------------------------------|-----|--|--|---|-----|--|--|-----|--|--|--|--|--|--|--|------|--|--|--|----------------------------|--|--|--|---|--|--|--|----------|--|--|--|
| Question Type: | Multiple Choice | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Status: | Active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Always select on test? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Authorized for practice? | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Points: | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time to Complete: | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difficulty: | 3.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System ID: | 1454851 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| User-Defined ID: | Q# 98 NEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lesson Plan Objective: | LOT1572 COND. OF OPS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topic: | SRO INOP annun | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RO: | 3.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SRO: | 3.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA#: | 2.2.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | <table border="1"> <thead> <tr> <th colspan="4">General Data</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td colspan="3">SRO</td> </tr> <tr> <td>Tier</td> <td colspan="3">3</td> </tr> <tr> <td>Group</td> <td colspan="3">n/a</td> </tr> <tr> <td>KA # and Rating</td> <td colspan="3">2.2.43 3.0/3.3</td> </tr> <tr> <td>KA Statement</td> <td colspan="3">Knowledge of the process used to track inoperable alarms.</td> </tr> <tr> <td>Cognitive level</td> <td colspan="3">lower</td> </tr> <tr> <td>Safety Function</td> <td colspan="3">n/a</td> </tr> <tr> <td>10 CFR 55</td> <td colspan="3">43.5</td> </tr> <tr> <td>Technical Reference with Revision No:</td> <td>OP-LG-103-102-1001</td> <td>Rev #:</td> <td>9</td> </tr> <tr> <td>Justification for Non SRO CFR Link:</td> <td colspan="3">n/a</td> </tr> <tr> <td>Question History: (i.e. LGS NRC-05, OYS CERT-04)</td> <td colspan="3">bank</td> </tr> <tr> <td>Question Source: (i.e. New, Bank, Modified)</td> <td colspan="3">bank</td> </tr> <tr> <td>Low KA Justification (if required):</td> <td colspan="3">n/a</td> </tr> <tr> <td>Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review)</td> <td colspan="3">n/a</td> </tr> <tr> <th colspan="4">ILT</th> </tr> <tr> <td>Supplied Ref (If appropriate): (i.e. ABN-##)</td> <td colspan="3"></td> </tr> <tr> <th colspan="4">LORT</th> </tr> <tr> <td>PRA: (i.e. Yes or No or #)</td> <td colspan="3"></td> </tr> <tr> <td>LORT Question Section: (i.e. A-Systems or B-Procedures)</td> <td colspan="3"></td> </tr> <tr> <td>Comments</td> <td colspan="3"></td> </tr> </tbody> </table> | | | General Data | | | | Level | SRO | | | Tier | 3 | | | Group | n/a | | | KA # and Rating | 2.2.43 3.0/3.3 | | | KA Statement | Knowledge of the process used to track inoperable alarms. | | | Cognitive level | lower | | | Safety Function | n/a | | | 10 CFR 55 | 43.5 | | | Technical Reference with Revision No: | OP-LG-103-102-1001 | Rev #: | 9 | Justification for Non SRO CFR Link: | n/a | | | Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank | | | Question Source: (i.e. New, Bank, Modified) | bank | | | Low KA Justification (if required): | n/a | | | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | n/a | | | ILT | | | | Supplied Ref (If appropriate): (i.e. ABN-##) | | | | LORT | | | | PRA: (i.e. Yes or No or #) | | | | LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | Comments | | | |
| General Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level | SRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tier | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Group | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA # and Rating | 2.2.43 3.0/3.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KA Statement | Knowledge of the process used to track inoperable alarms. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cognitive level | lower | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safety Function | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 CFR 55 | 43.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Technical Reference with Revision No: | OP-LG-103-102-1001 | Rev #: | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Justification for Non SRO CFR Link: | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question History: (i.e. LGS NRC-05, OYS CERT-04) | bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Question Source: (i.e. New, Bank, Modified) | bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low KA Justification (if required): | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ILT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplied Ref (If appropriate): (i.e. ABN-##) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRA: (i.e. Yes or No or #) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

99

ID: 1454568

Points: 1.00

SRO

Fuel is being loaded into the core on Unit 1, with the following:

- '1A' SRM count rate is 3.5 cps and has a signal-to-noise ratio of 2.5
- '1B' SRM count rate is 1.1 cps and has a signal-to-noise ratio of 7.0
- '1C' SRM count rate is 2.0 cps and has a signal-to-noise ratio of 1.5
- '1D' SRM count rate is 2.5 cps and has a signal-to-noise ratio of 2.3

REFUELING OPERATIONS

3/4.9.2 INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.9.2 At least two source range monitor (SRM) channels* shall be OPERABLE and inserted to the normal operating level with:

- a. Continuous visual indication in the control room,
- b. At least one with audible alarm in the control room,
- c. One of the required SRM detectors located in the quadrant where CORE ALTERATIONS are being performed and the other required SRM detector located in an adjacent quadrant, and
- d. Unless adequate shutdown margin has been demonstrated, the shorting links shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn.**

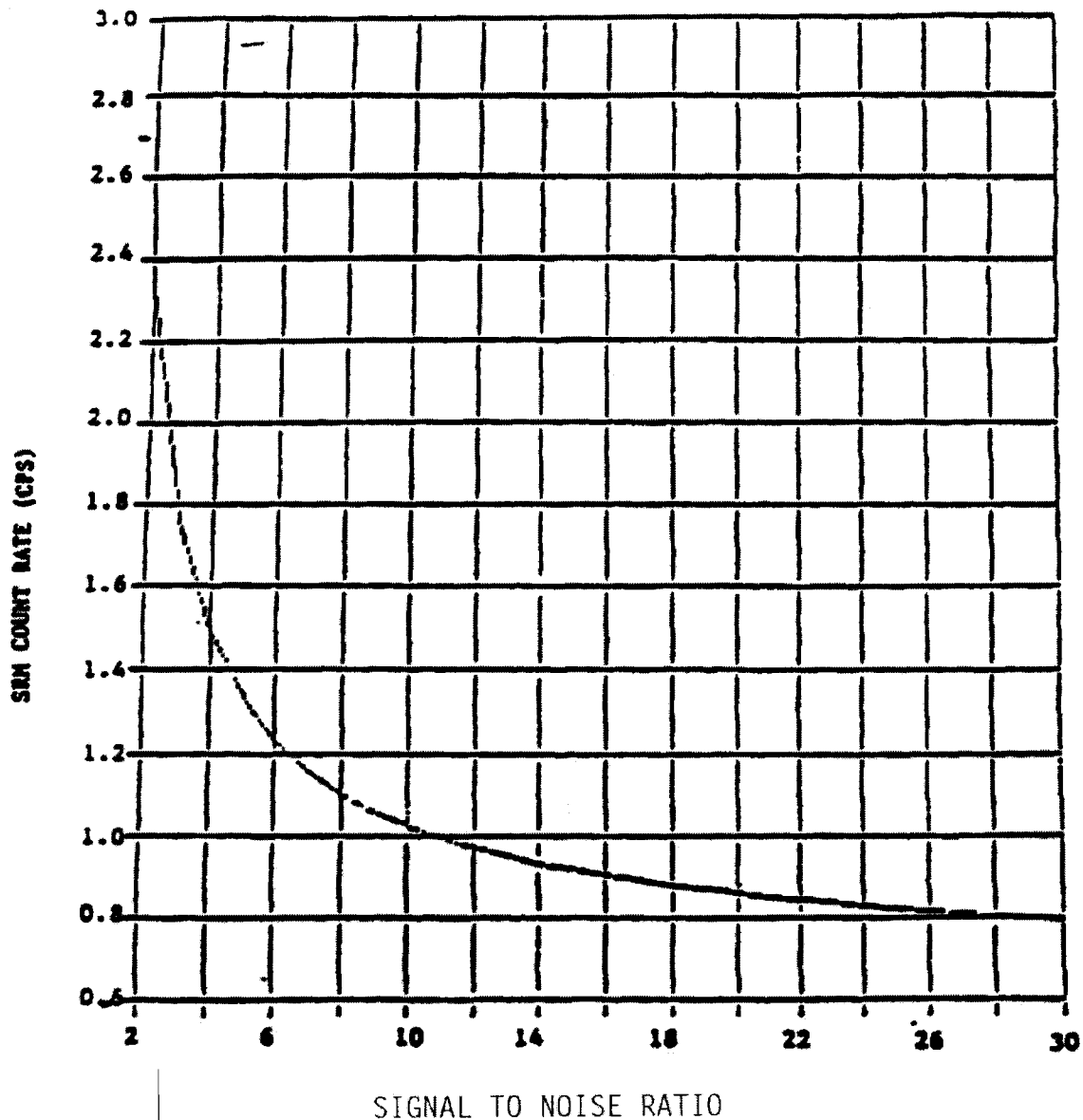
APPLICABILITY: OPERATIONAL CONDITION 5.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS and insert all insertable control rods.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO



SRM COUNT RATE VERSUS SIGNAL TO NOISE RATIO

FIGURE 3.3.6-1

WHICH ONE of the following describes the limitations, if any, regarding loading fuel into the core?

- A. Fuel may be loaded into any quadrant.
- B. All fuel loading must be suspended immediately.
- C. Fuel may be loaded into "A" or "D" core quadrants ONLY.
- D. Fuel may be loaded into "A", "C" or "D" core quadrants ONLY.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

Answer: C

Answer Explanation

"A" SRM is operable even though 3.5 CPS is above the graph. The signal to noise ratio is used when counts are low and background noise may override the SRM signal. as seen on the graph once count rate exceeds approximately 2.3 any signal to noise ratio > approximately 2 will result in an operable SRM

SRM B and C are below the line for signal to noise ratio and therefore INOP

Correct: C

"1B" and "1C" SRMs are INOPERABLE ("1C" due to inadequate Signal-To-Noise Ratio per Technical Specification Figure 3.3.6-1). Therefore, fuel movement is only permitted in quadrants "A" and "D" per Technical Specification 3.9.2 (detector in the quadrant where CORE ALTERATIONS are being performed and one in an adjacent quadrant, with adjacent being defined as "NOT diagonal")

Limerick Core quadrants are laid out as follows:

AB
DC

Incorrect: A

With "1B" and "1C" SRMs INOPERABLE, fuel movement is permitted in quadrants "A" and "D" per Technical Specification 3.9.2 only (detector in the quadrant where CORE ALTERATIONS are being performed and one in an adjacent quadrant, with adjacent being defined as "NOT diagonal"). Plausible to the candidate that mistakenly determines no SRMs are INOP due to assessing Signal to noise ratio incorrectly.

Incorrect: B

With "1B" and "1C" SRMs INOPERABLE, fuel movement is still permitted, but only in quadrants "A" and "D" per Technical Specification 3.9.2 (detector in the quadrant where CORE ALTERATIONS are being performed and one in an adjacent quadrant, with adjacent being defined as "NOT diagonal"). Plausible to the candidate that mistakenly determines one or more additional inoperable SRMs due to assessing Signal to noise ratio incorrectly.

Incorrect: D

Fuel cannot be loaded into quadrant "C" because the "1C" SRM detector is INOPERABLE, and Technical Specification 3.9.2 requires a detector in the quadrant where CORE ALTERATIONS are being performed and one in an adjacent quadrant (adjacent being defined as "NOT diagonal"). Plausible to the candidate that mistakenly determines no additional SRMs are INOP due to assessing Signal to noise ratio incorrectly.

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 99 Info | |
|--------------------------|--|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 3 |
| Difficulty: | 2.00 |
| System ID: | 1454568 |
| User-Defined ID: | Q#99 BANK |
| Lesson Plan Objective: | LGSOPS1800.6B |
| Topic: | (SRO ONLY) - Tech Spec - SRM Operability During Fuel Loading |
| RO: | 3.0 |
| SRO: | 4.1 |
| KA#: | 2.1.36 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | |
|-----------------|--|--|---------------|
| Comments: | General Data | | |
| | Level | SRO | |
| | Tier | 3 | |
| | Group | N/A | |
| | KA # and Rating | 2.1.36 IMPORTANCE RO 3.0 SRO 4.1 | |
| | KA Statement | Knowledge of procedures and limitations involved in core alterations. | |
| | Cognitive level | High | |
| | Safety Function | N/A | |
| | 10 CFR 55 | 41.10; 43.6 | |
| | Technical Reference with Revision No: | Technical Specification 3.9.2 and Technical Specification Figure 3.3.6-1 | Rev #: |
| | Justification for Non SRO CFR Link: | n/a | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | Bank 591173 | |
| | Question Source: (i.e. New, Bank, Modified) | Bank | |
| | Low KA Justification (if required): | n/a | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | |
| | ILT | | |
| | Supplied Ref (If appropriate): (i.e. ABN-##) | none | |
| | LORT | | |
| | PRA: (i.e. Yes or No or #) | | |
| | LORT Question Section: (i.e. A-Systems or B-Procedures) | | |
| Comments | | | |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

100

ID: 1454415

Points: 1.00

SRO

Unit 1 is operating at 100% power.

- The Main Steam Line (MSL) Rad Monitors at 10C600 read as follows:

A – 2141 mR/hr up slow

B – 2170 mR/hr up slow

C – 2156 mR/hr up slow

D – 2196 mR/hr up slow

- The HWC system is functioning correctly
- The following annunciators have been received:

- 109 RAD-F1, 1 MAIN STEAM LINE DIVISION 1 RAD MONITOR HI/DOWNSCALE
- 109 RAD-F2, 1 MAIN STEAM LINE RAD MON C/D HI/DOWNSCALE

WHICH ONE of the following identifies the procedure(s) requiring entry and an action(s) required as a result of the above conditions?

ON-102, Air Ejector Discharge or Main Steam Line High Radiation

T-101, RPV Control

T-103, Secondary Containment Control

| | <u>Procedure(s) requiring entry</u> | <u>Action(s) required</u> |
|----|-------------------------------------|--|
| A. | ON-102 but NOT T-103 | Reduce reactor power to lower MSL Rad levels below 1.5X NFPB |
| B. | ON-102 AND T-103 | Reduce reactor power to lower MSL Rad levels below 1.5X NFPB |
| C. | ON-102 but NOT T-103 | Shutdown the reactor and close the MSIVs |
| D. | ON-102 AND T-103 | Shutdown the reactor and close the MSIVs |

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

From the stem the SRO candidate identifies that Main Steam Line (MSL) radiation is elevated and above 1.5 X Normal Full Power Background (NFPB) (the alarm set points are 1.5 X NFPB) for 109-F1 and 2 . Also from the stem the students determine that MSL Rad is below 3 X NFPB (based on the absence of ARC-MCR-107 I1, Main steam line high-high radiation). Based in this information the appropriate procedures are both ON-102 and T-103. The appropriate action for these conditions is found in ON-102 step 2.2:

2.2 IF power reduction is required to maintain air ejector discharge radiation level below HiHi Alarm setpoint (ARC-MCR-*09 G1)

OR main steam line radiation level below 1.5x normal full power background,

THEN REDUCE reactor power in accordance with GP-5 Appendix 2, Section 3.1, Reducing Rx Power,

AND Reactor Maneuvering Shutdown Instructions to maintain air ejector discharge radiation level below Hi Hi Alarm setpoint (ARC-MCR-*09 G1)

AND Main Steam Line radiation level below 1.5 x normal full power background. (**CM-1** T03582)

- A Wrong - Does not identify T-103 entry. Plausible to the student that believes T-103 entry is not required until 3X NFPB
- B Correct - See discussion above
- C Wrong - Does not identify T-103 entry and identifies that wrong actions for the given conditions. Plausible to the student that believes T-103 entry is not required until 3X NFPB and believes that closure of the MSIVs is required at 1.5 X NFPB. This is required above 3 x NFPB
- D Wrong - Identifies that wrong actions for the given conditions. Plausible to the student that believes that closure of the MSIVs is required at 1.5 X NFPB. This is required above 3 x NFPB

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| Question 100 Info | |
|--------------------------|---|
| Question Type: | Multiple Choice |
| Status: | Active |
| Always select on test? | No |
| Authorized for practice? | No |
| Points: | 1.00 |
| Time to Complete: | 5 |
| Difficulty: | 2.00 |
| System ID: | 1454415 |
| User-Defined ID: | Q#100 NEW |
| Lesson Plan Objective: | LGSOPS0026A.IL12 |
| Topic: | SRO - Interpreting MSL Rad Monitor Readings |
| RO: | 2.9 |
| SRO: | 2.9 |
| KA#: | 272000 G2.3.5 |

EXAMINATION ANSWER KEY

ILT 15-01 January 2017 NRC test SRO

| | | | | |
|--|--|--|---------------|--------------------|
| Comments: | General Data | | | |
| | | | | |
| | Level | SRO | | |
| | Tier | 3 | | |
| | Group | N/A | | |
| | KA # and Rating | 2.3.5 IMPORTANCE RO 2.9 SRO 2.9 | | |
| | KA Statement | Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc. | | |
| | Cognitive level | High | | |
| | Safety Function | N/A | | |
| | 10 CFR 55 | 41.11, 41.12, 43.5 | | |
| | Technical Reference with Revision No: | ARC-MCR-10 9 F1 ARC-MCR-10 9 F2 ON-102 T-103 | Rev #: | 0 1 29 23 |
| | Justification for Non SRO CFR Link: | N/A | | |
| | Question History: (i.e. LGS NRC-05, OYS CERT-04) | New | | |
| | Question Source: (i.e. New, Bank, Modified) | New | | |
| | Low KA Justification (if required): | | | |
| | Revision History: Revision History: (i.e. Modified distractor "b" to make plausible based on OTPS review) | | | |
| | ILT | | | |
| | Supplied Ref (if appropriate): (i.e. ABN-##) | None | | |
| | LORT | | | |
| | PRA: (i.e. Yes or No or #) | | | |
| LORT Question Section: (i.e. A-Systems or B-Procedures) | | | | |
| Comments | | | | |