

INITIAL SUBMITTAL OF WRITTEN EXAMINATION AND COMMENTS

FOR THE DRESDEN INITIAL EXAMINATION THE WEEKS OF FEBRUARY 5 AND 12, 2001

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
1	BOTH	2	2.50	201001	K3.03	3.1 / 3.2	20101LK001

Unit 3 is operating at 50% power with the following CRD system indications:

Drive water differential pressure	265 psid
Drive flow	0.0 gpm
Charging Header pressure	1450 psig
CRD system flow	50 gpm

While attempting to INSERT control rod M-05, drive water flow is observed to be 0.0 gpm.

When attempting to WITHDRAW control rod M-05, drive water flow is observed to be 2.0 gpm.

The control rod does NOT move.

Which of the following describes the cause of the above indications?

Directional Control Valve ...

- A. 122 is stuck closed.
- B. 122 is stuck open.
- C. 123 is stuck closed.
- D. 123 is stuck open.

Answer:

C

Ref(s):

SDM 201001

Question pedigree:

INPO Exam Bank QID 264

Explanation/Comments:

122 stuck open would provide continuous withdrawal flow.

123 stuck open would provide continuous insert flow.

122 stuck closed would prohibit withdrawal flow but allow insert flow.

123 stuck closed prohibit insert flow. This prevents the control rod to be lifted off the collet fingers. Once the sequence timer times through a withdrawal sequence and opens the 120 and 122 valves, withdrawal flow (2.0 gpm) may be seen due to leak by in the CRD housing.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
2	BOTH	2	3.00	201001	K5.02	2.6 / 2.6	201L-S1-06

Unit 3 is in a normal at power configuration when a single event/malfunction occurred affecting the CRD system. NO operator actions were performed.

The operator observed the following indications before the event and after the CRD System stabilized:

	BEFORE	AFTER
CRD flow controller – flow indication	58 gpm	0 gpm
CRD flow controller – demand indication	60%	100%
Cooling Water Flow	58 gpm	0 gpm
Cooling Water Pressure	25 psid	0 psid
Drive Water Pressure	280 psid	0 psid
Charging Pressure	1475 psig	1650 psig

Which of the following is the cause for this event?

- A. A Reactor Scram has occurred.
- B. The flow control valve failed closed.
- C. The Charging Header '25' valve was inadvertently opened.
- D. The flow transmitter output to the flow controller failed high.

Answer:

Ref(s):

Question pedigree:

B

M-34

LOC #20101B0182

Explanation/Comments:

The FCV is upstream of the cooling and drive water headers. The FCV failing closed would cause flow to the cooling and drive water headers to be zero. With no flow through the throttled CRD pump discharge valve, the charging header pressure would increase to CRD pump discharge pressure. If a scram had occurred, the CRD flow controller flow indication would be higher than before the start of the event and charging header pressure would be lower. The CRD '25' valve normally has no flow through the charging header. Changing the '25' valve alone should not change system flows. If the flow controller flow transmitter output failed high, then the flow controller flow indication would be pegged high.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
3	BOTH	2	3.13	201003	A1.03	2.9 / 2.9	201L-S1-03

Unit 2 was at rated conditions.

The CRD system was in a normal lineup.

A leak slowly developed on the Unit 2 RVWLIS piping increasing to 1 gpm over several hours.

Which of the following describes how CRD control room indication would be affected by the leak?

- A. Cooling water flow indication would increase by 1 gpm.
- B. Drive water flow indication would increase by 1 gpm.
- C. System flow indication would increase by 1 gpm.
- D. System flow indication would decrease by 1 gpm..

Answer:

Ref(s):

Question pedigree:

B

M-34 (CRD System Horse Note)

New

SDM 201001

Explanation/Comments:

RVWLIS taps off just downstream of the drive water flow element. Drive water flow would increase. System flow would remain constant with the flow control valves in automatic. Cooling water flow would decrease as system flow remained constant and leak flow increased.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
4	BOTH	1	1.50	202001	K2.01	3.2* / 3.2	202L-S1-03

Unit 2 was operating at rated conditions when Bus 22 tripped.

Which of the following would be directly affected as a result of that trip?

- A. 2B Condensate Booster Pump.
- B. 2B Core Spray Pump.
- C. 2B Instrument Air Compressor.
- D. 2B Reactor Recirculation Pump.

Answer:

Ref(s):

Question pedigree:

D System Description Manuals:259001, 209001, 278000,
202001

New

Explanation/Comments:

- 2B Core Spray Pump is powered from Bus 24-1
- 2B IA Compressor is powered from Bus 27
- 2B Condensate Booster Pump is powered from Bus 23
- 2B Reactor Recirculation Pump is powered from Bus 22

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
5	BOTH	2	3.63	202002	K3.01	3.5 / 3.5	202L-S1-12 202L-S3-03

Unit 2 was operating in single loop operation at 45% power with the 2B Recirculation pump secured.

The 2A Recirculation MG scoop tube failed such that it repositioned to the fully retracted position.

Which of the following describes the expected change in core flow and its relationship to indicated core flow?

- A. Core flow will decrease and be less than indicated core flow.
- B. Core flow will decrease and be greater than indicated core flow.
- C. Core flow will increase and be less than indicated core flow.
- D. Core flow will increase and be greater than indicated core flow.

Answer:

Ref(s):

Question pedigree:

C

SDM 202001

New

Explanation/Comments:

With the scoop tube at the fully retracted position, the MG would accelerate to maximum speed.

Core flow would increase.

With the running pump above 40% of rated speed, the calculated core flow would be higher than actual core flow due to reverse flow through the jet pumps in the idle loop.

$$WT_{SLO} = (.49)[(\% \text{ loop flow active}) - (0.95)(\% \text{ loop flow inactive})]$$

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
6	RO	1	2.50	203000	2.2.12	3.0	20300LK003

LPCI System Quarterly Flow Rate Test (DOS 1500-05) operates...

- A. pumps individually to ensure each pump will pass the required flow.
- B. two pumps at a time in a single division to ensure each division will pass the required flow.
- C. pumps in combinations of three to ensure the system will pass the required flow.
- D. all four pumps simultaneously to ensure the system will pass the required flow.

Answer:

Ref(s):

Question pedigree:

C

DOS-1500-05, Rev. 29

New

Explanation/Comments:

The acceptance criteria for the test verifies LPCI pumps, operated in combinations of three, can pass 14,500 gpm.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
7	BOTH	2	3.00	203000	K4.07	3.7 / 3.9	203L-S1-05

Unit 3 was at rated conditions when the following occurred in the following order:

- LOCA
- Drywell pressure reached +6 psig
- Loss of Offsite Power occurred
- EDGs closed onto ECCS Buses resetting the UV relays

Which of the following describes how the LPCI pumps will react?

- A. All LPCI pumps start 5 seconds after EDGs close onto ECCS Buses.
- B. "A" and "C" LPCI pumps start immediately after EDGs close onto ECCS Buses; "B" and "D" LPCI pumps start 5 seconds after EDGs close onto ECCS Buses.
- C. "A" and "C" LPCI pumps start 5 seconds after EDGs close onto ECCS Buses. "B" and "D" LPCI pumps start 10 seconds after EDGs close onto ECCS Buses.
- D. "A" and "C" LPCI pumps start immediately after EDGs close onto ECCS Buses; "B" and "D" LPCI pumps start 10 seconds after EDGs close onto ECCS Buses.

Answer:

Ref(s):

Question pedigree:

B

SDM 203000, 12E-2437

Dresden ILT Bank 20300S0381
(Significantly modified)

Explanation/Comments:

"A" and "C" LPCI pumps start immediately after EDGs close onto ECCS Buses;
"B" and "D" LPCI pumps start 5 seconds after EDGs close onto ECCS Buses.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
8	BOTH	2	2.50	204000	A2.08	2.9 / 3.1	204L-S1-05

A startup is in progress on Unit 3 with the following conditions:

- plant heatup in progress.
- reactor pressure is 50 psig.
- reactor coolant temperature is 270°F.

The RWCU Auxiliary Pump seal overheats and one of the alarms received is 903-4 H-12, RWCU AUX PP CLG WTR TEMP HI, is received.

The Rx Outlet Isol, MO 3-1201-1 and Rx Inlet Isol, MO 3-1201-2 close.

Which of the following describes the expected operator action?

Verify the RWCU Aux Pump is _____ and AUX PP SUCTION, MO 3-1201-3, and RX OUTLET BYP, MO 3-1201-1A, valves are _____.

- A. RUNNING OPEN
- B. TRIPPED OPEN
- C. RUNNING CLOSED
- D. TRIPPED CLOSED

Answer:

Ref(s):

Question pedigree:

D

DAN 902(3)-4 H-12, Rev. 04

New

Explanation/Comments:

Receipt of the RWCU AUX PP CLG WTR TEMP HI alarm indicates that cooling water exiting the Auxiliary Pump cooler is greater than 140°F. This condition results in an automatic closing of the RWCU system 1, 1A, 2, and 3 valves, and a trip of the Auxiliary Pump. The first operator action of DAN 902(3)-4 H-12 is to verify normal RBCCW flow to the Auxiliary Pump cooler.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
9	RO	2	3.50	206000	K2.03	2.8*	206L-S1-12 20600LR013 206L-S1-05

Unit 3 was operating at rated condition. An earthquake resulted in the following:

- 125 VDC Bus 3B-1 de-energized.
- A LOCA causing drywell pressure to increase to 5psig.
- Reactor water level decreased to -30 inches.

Which of the following describes the response of High Pressure Coolant Injection (HPCI) System to this transient?

The HPCI system ...

- A. automatically initiated and aligned for injection utilizing the alternate power supply.
- B. can be only be initiated if the power supply is manually transferred to an alternate source.
- C. isolated due to the loss of its isolation logic power supply.
- D. will automatically initiate if reactor water level decreases an additional 30 inches.

Answer:

Ref(s):

Question pedigree:

A

Dresden SDM 206000

New

Explanation/Comments:

HPCI initiation logic is normally powered from 3B-1. If power is lost from 3B-1, power is made available from the alternate source (3A-1). The initiation setpoint for high drywell pressure is 2.0 psig. Therefore HPCI will initiate and inject into the vessel. The isolation logic power is energize to actuate.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
10	BOTH	2	3.63	206000	K3.01	4.0 / 4.0	206L-S1-06

Following an MSIV isolation at full power, HPCI received an auto initiate signal on RPV low level.

During the initiation, the HPCI pump flow signal was lost to the flow controller.

Which of the following describes the HPCI system response if no operator action was taken?

The HPCI turbine will ...

- A. overspeed and shutdown.
- B. remain at minimum speed.
- C. trip on high RPV water level.
- D. fail to start due to loss of the MGU signal input.

Answer:

Ref(s):

Question pedigree:

C

Cooper 98 NRC RO Exam Question #83

Explanation/Comments:

- a. HPCI turbine does not shut down on overspeed; will auto reset
- a, b with no sensed flow, flow demand will remain at maximum rated but will not cause a turbine overspeed
- d. speed reference signal is not required to initiate the ramp startup function.

With no flow signal to the flow controller, The FIC will send max error signal to the signal converter. The signal converter will send error signal to the MGU to maximize HPCI pump turbine speed resulting in maximum flow. This will result in a rising trend in RPV level and ultimately a HPCI turbine trip at +51 inches.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
11	BOTH	1	3.63	207000	K2.02	3.5 / 3.7	207L-S1-06

Unit 3 was operating at rated power when 125 VDC power was lost to Division I of the Isolation Condenser initiation and isolation logic.

Which of the following is expected to occur as a direct result of the loss of power?

- A. All Isolation Condenser isolation valves will close.
- B. An Isolation Condenser initiation will occur.
- C. All Isolation Condenser valves will remain as is.
- D. The Isolation Condenser inboard isolation valves will close.

Answer:

A

Ref(s):

SDM 207000

Question pedigree:

New

Explanation/Comments:

Both initiation and isolation signals are de-energize to trip. Initiation requires BOTH divisions to de-energize to generate an initiation signal. An isolation signal is generated upon EITHER division de-energizing. The isolation signal results in all isolation valves closing.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
12	BOTH	2	2.31	207000	K4.08	3.4 / 3.6	207L-S1-05

Following a reactor scram, Unit 2 reactor pressure is being maintained between 800 and 1000 psig using the Isolation Condenser.

The Outboard Condensate Return Valve (2-1301-3) is being throttled after taking the HAND/RESET switch to the HAND position.

If reactor pressure suddenly increased to 1100 psig for 16 seconds, the 2-1301-3 valve would...

- A. Fully open since another initiation signal has been received.
- B. Remain as is since the Hand/Reset Switch was taken to the HAND position.
- C. Remain as is since the initiation signal was reset.
- D. Throttle to the mid-position since another initiation signal has been received.

Answer:

Ref(s):

Question pedigree:

A

SDM 207000

New

Explanation/Comments:

Initiation signal generated with Reactor pressure greater than or equal to 1070 psig for 15 seconds. Once reset, the Isolation Condenser will initiate upon receiving a new initiation signal. On initiation the 2-1301-3 Outboard Condensate Return Valve will fully open unless in Pull-To-Lock.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
13	RO	2	4.14	209001	2.1.10	2.7	209L-S1-07a

Given the following plant conditions:

- Unit 2:
 - In "REFUEL" with core alterations in progress.
 - CRD mechanism removal is in progress. (This activity has the potential to drain the vessel.)
 - Torus is empty.
 - Both Core Spray pumps aligned to the 2/3A CST.
 - Both LPCI loops are drained.
- Unit 3 was shutdown.
- 1 CST indicated level 30,000 gallons of water.
- 2/3A CST indicated level 250,000 gallons of water.
- 2/3B CST drained.

An Instrument Technician informs the Unit 2 NSO that the 2/3A CST level indicator is reading high. The correct level in the tank corresponds to 100,000 gallons of water.

Based on this information...

- A. Both core alterations and CRD mechanism removal work may continue.
- B. Core alterations must be stopped but CRD mechanism removal may continue.
- C. CRD mechanism removal must be stopped but core alterations may continue.
- D. Both core alterations and CRD mechanism removal work must be stopped.

Answer:

D

Ref(s):

TS 3.5.B

Question pedigree:

20901B0081 (modified)

Explanation/Comments:

Minimum water available from CST is 140,000 gallons. With less than required, you must suspend all core alterations and operations with the potential for draining the vessel.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
14	SRO	2	3.25	209001	2.1.7	4.4	209L-S1-05

A transient occurred on Unit 3:

- Drywell pressure peaked at +4 psig.
- Drywell pressure is now 1 psig and steady.
- RPV level is 18" and dropping.
- RPV pressure is 230 psig and going down.
- PP DISCH VALVE, MO 2-1402-25A, is full OPEN.
- The NSO shut the PP DISCH VALVE, MO 2-1402-24A, to terminate injection from A Core Spray System.

To raise RPV water level using the 2A Core Spray Pump, the Unit Supervisor should direct the NSO to ...

- A. open the 24A valve, then throttle the 25A valve for level control.
- B. open the 24A valve; once the 24A valve is full open then throttle the 24A valve to control level.
- C. close the 25A valve, then open the 24A valve. Once the 24A valve is open, throttle the 25A valve to control level.
- D. wait until RPV water level reaches +8", the 24A valve will then automatically open, then throttle the 25A valve for level control.

Answer:

C

Ref(s):

12E-2430
SDM 209001

Question pedigree:

20901S0021

Explanation/Comments:

An interlock exists between the 1402-24 valve and the 1402-25 valve such that if Reactor pressure is less than 350#, both valves can be open, but if the 24 valve is closed, the 25 valve must be closed before the 24 valve can be re-opened. Since in this case reactor pressure is less than 350# and no initiation signal is present, the interlock is in effect and the 25 valve would have to be closed first in order to re-open the 24 valve and then control level with the 25 valve.

"a" is wrong because the interlock is in effect.

"b" is wrong because the 24 valve is not a throttle valve and the interlock is in effect.

"d" is wrong because +8" is not a core spray initiation signal so the 24 valve will not open.

"c" is the only correct answer.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
15	BOTH	2	2.25	209001	K1.03	2.9 / 3.0	209L-S1-02

It is planned to isolate and drain the suction piping for the Unit 2 "B" Core Spray pump.

The Jockey Pump could...

- A. supply ALL Unit 2 ECCS Keepfill.
- B. supply Unit 2 ECCS Keepfill ONLY to Core Spray "A" and LPCI System "A."
- C. supply Unit 2 ECCS Keepfill ONLY to LPCI System "A" and LPCI System "B."
- D. NOT supply ANY Unit 2 ECCS Keepfill.

Answer:

A

Ref(s):

SDM 209000

Question pedigree:

New

Explanation/Comments:

On Unit 2, the jockey pump takes a suction on the "A" Core spray pump. (Different between Unit 2 and Unit 3.)

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
16	BOTH	1	2.13	211000	A1.02	3.8 / 3.9	211L-S1-05

A transient has occurred on Unit 2.

- The Unit Supervisor ordered SBLC started for injection into the reactor.
- The NSO placed the INJECTION CONTROL switch to the SYS 2 position.

Which of the following describes the expected status of the Squib A and Squib B indicating lights following the NSO's actions?

	<u>Squib A light</u>	<u>Squib B light</u>
A.	ENERGIZED	ENERGIZED
B.	ENERGIZED	DE-ENERGIZED
C.	DE-ENERGIZED	ENERGIZED
D.	DE-ENERGIZED	DE-ENERGIZED

Answer:

B

Ref(s):

SDM 211001

Question pedigree:

New

Explanation/Comments:

With the control switch in SYS 2, the 2B Squib valve will fire (light go out) and the 2B SBLC pump will start. The 2A squib valve will NOT fire and the 2A SBLC pump will NOT start.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
17	BOTH	2	3.00	214000	K6.02	2.7 / 2.7	201L-S2-03

Control Rod F-09 is uncoupled.

The overtravel reed switch on control rod F-09's position probe is stuck open.

Which of the following describes the expected indication on the MCR display if control rod F-09 were withdrawn to position 48 and a coupling check then performed?

The position readout for Control Rod F-09 on the Full Core Display will . . .

- A. be blank and an OVERTRAVEL alarm will be received.
- B. indicate a Red "48" and an OVERTRAVEL alarm will be received.
- C. be blank and an OVERTRAVEL alarm will NOT be received.
- D. indicate a Red "48" and an OVERTRAVEL alarm will NOT be received.

Answer:

Ref(s):

Question pedigree:

C

SDM 201002

New

Explanation/Comments:

With the control rod uncoupled, the mechanism will settle to the overtravel position (146 inches from full-in).

With the overtravel reed switch stuck open, no alarm will be generated. There is no indication on the MCR display when a control rod is in the overtravel beyond full-out position.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
18	RO	1	2.50	215001	A1.06	2.9	215L-S1-12

The U-2 TIP Cubicle ARM station reading increases during normal TIP operation.

Which of the following events would prevent the U-2 TIP Cubicle ARM station from returning to a normal value?

- A. Inserting two detectors both selected for the common channel.
- B. Activation of the cable shear valve during a TIP trace.
- C. Failure of the TIP detector proximity switch during withdrawal.
- D. Selecting another channel when a TIP detector is in the indexer.

Answer:

Ref(s):

Question pedigree:

C.

SDM 215001

New

Explanation/Comments:

The proximity switch would normally stop the withdrawal with the TIP detector in the shield chamber. Since the proximity switch has failed, the detector would be withdrawn past the shield chamber and then be stopped by Drive Control Unit when the Veeder Root Counter sees a value below that identified on the "Reverse Safety Stop" label. This will leave the probe past the shield chamber, but still inside the TIP room.

Activation of the cable shear valve would not increase the radiation level in the TIP cubicle.

The detectors are interlocked to allow only one detector aligned to the common location.

The indexer is in the drywell and is prevented from moving if a detector is in the movable tube.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
19	RO	2	3.64	215001	K6.04	3.1	215L-S1-05

Immediately after a Unit 3 TIP scan started supplying the process computer with flux data, the PCIS Group 2 logic erroneously initiated.

Which of the following describe the response of the TIP system to the initiation?

The TIP drive mechanism ...

- A. starts to withdraw the detector at HIGH speed.
The guide tube ball valve closes when the detector is in its shield chamber.
- B. continues to withdraw the detector at LOW speed.
The guide tube ball valve closes when the detector is in its shield chamber.
- C. starts to withdraw the detector at HIGH speed.
The guide tube ball valve closes when the detector is past its indexer.
- D. continues to withdraw the detector at LOW speed.
The guide tube ball valve closes when the detector is past its indexer.

Answer:

Ref(s):

Question pedigree:

B

SDM 215001

New

Explanation/Comments:

With a scan in progress, the detector would be in the core. Detector speed in the core is LOW SPEED. On receipt of a Group II Isolation Signal, the TIP is transferred automatically to the "manual reverse" mode of operation. When the detector is its Shield Chamber, as indicated by the limit switch, the Guide Tube Ball Valve closes.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
20	BOTH	2	3.38	215002	K1.06	3.0 / 3.1	21502LK004

Unit 3 is operating at 80% power.

- The CRD Weekly Exercise surveillance is in progress.
- Control Rod E-04 has just been exercised.
- When the NSO selected the next Control Rod (E-11), the white backlight illuminated.
- The white backlight for Control Rod E-04 also remained illuminated.

Control rod motion should . . .

- A. continue after completion of the RBM null sequence for Control Rod E-04.
- B. NOT continue due to a RBM INOP rod block.
- C. NOT continue due to a RMCS select block.
- D. NOT continue due to a RMCS timer malfunction.

Answer:

Ref(s):

Question pedigree:

B

SDM 215002

New

Explanation/Comments:

Two white backlights illuminated indicates that more than one control rod is selected. With more than one rod selected there would be a control rod block from a RBM INOP condition.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
21	BOTH	2	2.38	215002	K5.01	2.6 / 2.8	215L-S2-05

U-3 is in STARTUP.

The NSO selected control rod M-8.

The RBM channel 8 "Push To Set Up" light illuminated.

Withdrawal of control rod M-8 is allowed ...

- A. ONLY if RBM channel 8 is bypassed.
- B. until the "SET HI" light illuminates.
- C. ONLY if the "SET UP" button is depressed.
- D. until the selected Trip Reference Level is reached.

Answer:

Ref(s):

Question pedigree:

D

215L-S2 and SDM215002

ILT Bank #21502S0101

Explanation/Comments:

Important for RO to predict system response base on panel indications. Rod motion is allowed until the current trip reference set point is exceeded. Bypassing the RBM would allow rod withdrawal to continue, but it is NOT the ONLY method; 'a' is incorrect. When the highest trip setpoint is limiting the "Set Hi" light will illuminate, but rod motion could continue until the trip setpoint is actually reached, and then rod motion ceases; 'b' is incorrect. The "Push to Setup" light comes on when power is within 2% of the reference trip setpoint however, rod motion is NOT prevented at this point; 'c' is incorrect. The rod block occurs when the referenced trip setpoint is reached; 'd' is correct.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
22	SRO	2	4.00	215003	2.1.7	4.4	20102LK005

A reactor startup is in progress and the following conditions exist . . .

- Power has risen from 10/40 on IRM range 3 to 40/125 on IRM range 4 in 40 seconds.
- NO rod motion is in progress.

Based on the above conditions, the reactor period is about (1) and the Unit Supervisor should direct the NSO to (2).

- | | | |
|----|------------|--|
| | (1) | (2) |
| A. | 29 seconds | insert control rods to obtain a longer reactor period. |
| B. | 29 seconds | allow the power increase to continue since the reactor period is reasonable. |
| C. | 58 seconds | insert control rods to obtain a longer reactor period. |
| D. | 58 seconds | allow the power increase to continue since the reactor period is reasonable. |

Answer:

Ref(s):

Question pedigree:

A

DGP 01-01 Rev 90

New

Explanation/Comments:

Reactor period (P) = doubling time (DT) X 1.44

Power doubled twice; 10/40 – 10./125: 10 to 20 and 20 to 40 in 40 seconds.

The doubling time would then be 40 sec/2.

Therefore P = (40 sec/2) x 1.44 = 20 sec. x 1.44. Period = 28.8 sec.

With a reactor period of less than 60 seconds, control rods should be inserted until a reasonable period is achieved (60 seconds to 300 seconds.)

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
23	BOTH	1	1.80	215003	K4.05	2.9 / 3.0	215L-S3-03

Which of the following methods is utilized to increase Intermediate Range Monitor (IRM) detector life?

During power operations, the . . .

- A. potential across the detector is reduced by removing the high voltage power supply.
- B. potential across the detector is reduced by maintaining the range switches below range 7.
- C. flux reaching the detector is reduced by withdrawing the detector into an in-core shield.
- D. flux reaching the detector is reduced by withdrawing the detector from the reactor core.

Answer:

Ref(s):

Question pedigree:

D

SDM 215003

New

Explanation/Comments:

Removing them from the core as soon as they are no longer needed reduces exposure to the IRM detectors and increases their lifetime.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
24	RO	2	3.43	215004	K6.05	2.6	215L-S4-09

A reactor startup in progress on Unit 2.

The IRM detector range switches are aligned as follows:

- IRM channels 15 and 16 are on range 2.
- All other IRM channels are on range 3.

SRM 21 indication decreases to 2 cps due to a failure of an amplifier in the trip unit.

As a result of this failure . . .

- A. ROD OUT BLOCK and SRM HI/INOP alarms are received.
- B. only a SRM HI/INOP alarm is received.
- C. only a SRM DOWNSCALE alarm is received.
- D. ROD OUT BLOCK and SRM SHORT PERIOD alarms are received.

Answer:

Ref(s):

Question pedigree:

C

SDM 215004

New

Explanation/Comments:

SRMs 21 and 22 are associated with IRMs 11, 12, 13, and 14.

The retract permit does not give a control rod block since the associated IRMs are all on range 3.

The SRM DOWNSCALE alarm would be activated since the output was less than 3 cps.

SRM HI/INOP would come in on a downscale failure of the High Voltage power supply not the Trip circuit.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
25	RO	2	2.29	215005	A4.04	3.2	215L-S5-03

An operator needed to confirm that there are 20 LPRM inputs to ARPM channel 4.

The operator placed the APRM Channel 4 Meter Function Switch to COUNT.

Which of the following would the operator expect to read on the APRM meter?

- A. 2 on the 0 – 10 scale.
- B. 10 on the 0 – 10 scale.
- C. 20 on the 0 – 125 scale.
- D. 100 on the 0 – 125 scale.

Answer:

D

Ref(s):

SDM 215005

Question pedigree:

New

Explanation/Comments:

Each LPRM sends the count circuit a fixed current signal when its mode switch is in OPERATE. The count amplifier changes the current inputs to a voltage output and produces a meter reading of 5% for each LPRM that is in operate. With 20 LPRMs providing a signal, the meter should read 100 on the 0 – 125 scale.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
26	BOTH	1	3.75	215005	K6.07	3.2 / 3.3	215L-S5-5.c

Which of the following will result from a Recirculation drive flow signal of 115% to Flow Converter Unit 2?

- A. An APRM INOP half scram occurs.
- B. A control rod withdraw block occurs.
- C. The APRM HI-HI flow biased trip setpoints are overly conservative.
- D. The affected APRMs automatically shift to the other flow converter.

Answer:

B

Ref(s):

DAN 902(3)-5 D-6

Question pedigree:

ILT EB #21505S0351

Explanation/Comments:

Recirculation (RECIRC) drive flow signal greater than 110 percent will cause a control rod withdrawal block.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
27	BOTH	2	1.75	218000	A4.08	3.7 / 3.8	223L-S1-05

Which of the following would be used to verify torus water level was 11 feet prior to initiating ADS?

- A. Narrow Range Torus Level indication on 902-1 panel.
- B. Narrow Range Torus Level indication on 902-3 panel.
- C. Wide Range Torus Level indication on 902-1 panel.
- D. Wide Range Torus Level indication on 902-3 panel.

Answer:

D

Ref(s):

SDM 223001

Question pedigree:

New

Explanation/Comments:

The torus narrow range indicator meters level from -25 to 25 inches at the torus centerline on the 902-3 panel.

The torus wide range indicator meters level from 0 to 30 feet from the torus bottom on the 902-3 panel.

If torus level was 11 feet, only the Wide Range instruments would be on scale.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
28	BOTH	2	3.25	218000	K1.05	3.9 / 3.9	29501LP024

A fire occurred in the Control Room HVAC Room.

Control Room evacuation was directed by the Shift Manager.

The Unit 2 and Unit 3 NSOs, prior to their departure from the control room, performed all required actions.

Which of the following describe ADS valve operation following the evacuation?

- A. No ADS valves will open under ANY condition.
- B. Only one ADS valve will open if reactor pressure exceeds the safety setpoint.
- C. All ADS valves will open if ADS automatically actuates.
- D. All ADS valves will open if their relief setpoint(s) are exceeded.

Answer:

Ref(s):

Question pedigree:

B

DSSP 0100-CR Rev 21
SDM 239001

New

Explanation/Comments:

DSSP-0100-CR directs that ADS is inhibited and relief valve control switches are placed in OFF.

Four of the ADS valves will not open under any condition.

The fifth ADS valve will still open in the safety mode if reactor pressure exceeds the safety valve pressure setpoint.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
29	RO	2	3.36	219000	A2.12	3.0	203L-S1-05

Unit 3 was at rated conditions with Division 1 LPCI loop was running in torus cooling for a HPCI surveillance.

A large-break LOCA occurred on the 'B' recirculation loop.

- RPV water level is – 140 inches and decreasing.
- RPV pressure is 300 psig and stable.

The NSO observes valves TORUS CLG/TEST MO 3-1501-38A and TORUS CLG/TEST MO 3-1501-20A full open.

Which of the following describes the consequences of the NSO's observation AND the action that the NSO should perform as a result?

- A. INJ VLV MO 3-1501-22A should be closed and there will be no injection flow.
The NSO should close 3-1501-38A and 3-1501-20A and open 3-1501-22A.
- B. LPCI VLV MO 3-1501-21A should be open but injection flow will be low.
The NSO should close 3-1501-38A and 3-1501-20A.
- C. INJ VLV MO 3-1501-22A should be closed and there will be no injection flow.
The NSO should ensure 3-1501-38A and 3-1501-20A remain open by turning the Containment Spray/Torus Cooling Permissive switch to MANUAL.
- D. LPCI VLV MO 3-1501-21A should be open but injection flow will be low.
The NSO should close 3-1501-21A and ensure 3-1501-38A and 3-1501-20A remain open by turning the Containment Spray/Torus Cooling Permissive switch to MANUAL.

Answer:

Ref(s):

Question pedigree:

B

SDM 203000

New

Explanation/Comments:

INJ VLV MO 3-1501-22A and LPCI VLV MO 3-1501-21A open with an initiation signal present and RPV pressure less than 350 psig.

With TORUS CLG/TEST MO 3-1501-38A and TORUS CLG/TEST MO 3-1501-20A failed full open, injection flow would be greatly reduced.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
30	SRO	2	2.00	223001	2.2.22	4.1	223L-S3.7a

With Unit 2 at rated power, an event occurred resulting in the following plant conditions:

- Drywell pressure 0.90 psig
- Torus pressure -0.05 psig

Which of the following actions will allow continued operation without reliance upon an LCO action statement?

- A. Raise Torus pressure by 0.05 psig.
- B. Reduce Drywell pressure by 0.06 psig.
- C. Raise Drywell pressure by 0.11 psig.
- D. Reduce Torus pressure by 0.10 psig.

Answer:

Ref(s):

Question pedigree:

C

TS 3.7.G, TS 3.7.H

Modified LORT Bank #9 22301B0211

Explanation/Comments:

Drywell pressure must be maintained ≥ 1.0 psig and < 1.5 psig. Torus pressure must be maintained ≤ 1.0 psid below drywell pressure. Drywell pressure must be increased by at least 0.1 psig to meet the requirements of T.S. 3.7.G.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
31	BOTH	1	3.67	223001	A1.05	3.1 / 3.3	55LC011-03

A transient occurred on Unit 3 resulting in the following conditions:

- Drywell Pressure 3 psig
- Containment O₂ 2%
- Containment H₂ 7%

The Unit Supervisor has directed containment venting be initiated to reduce the hydrogen concentration per DEOP 500-04.

N₂ purge flow must be obtained using NCAD bypass flow.

The total amount of the radioactive release should be limited by only venting until ...

- A. H₂ concentration is below 6% in the containment.
- B. H₂ concentration is below 5% in the containment.
- C. H₂ concentration is below 1% in the containment.
- D. N₂ purge flow is 35 scfm.

Answer:

C

Ref(s):

DEOP 500-4

Question pedigree:

ILT Exam Bank #05500B0381
(Significantly modified)

Explanation/Comments:

DEOP 0500-04 Limitations and Actions: Step F.1. states to limit the radioactive release by controlling hydrogen concentration below 1% (minimum detectable concentration).

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
32	SRO	1	2.50	223002	2.1.32	3.8	239L-S1-07

Which of the following describe the MINIMUM closure time of the MSIVs and the bases for that time limit?

- A. 3 seconds, to prevent valve seat damage.
- B. 3 seconds, to prevent pressure surges.
- C. 5 seconds, to prevent valve seat damage.
- D. 5 seconds, to prevent pressure surges.

Answer:

Ref(s):

Question pedigree:

B

TS 3/4.6.M. and Bases

New

Explanation/Comments:

Per Tech Spec Bases, MSIVs must close between 3 and 5 seconds. The minimum closure time is consistent with the assumptions in the safety analysis to prevent pressure surges.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
33	BOTH	2	3.00	223002	A2.08	2.7 / 3.1	272L-S2-05

Provide copy of DOD 7500-02.

DOS 7500-02, SBTG Surveillance and IST Test, was in progress for post maintenance operability testing of SBTG train 2/3 A.

SBTG Fan 2/3A was started 20 minutes ago and all conditions were normal.

A Unit 2 drywell steam leak occurred.

Present conditions are as follows:

- RPV water level 15 inches and steady
- Drywell radiation 50 R/hr and steady
- Drywell pressure 2.2. psig and steady

Regarding SBTG, the expected operator actions are to ...

- A. continue to run SBTG Train 2/3A and leave SBTG Train 2/3B in STBY.
- B. place SBTG Train 2/3B in PRI and then place SBTG Train 2/3A in OFF.
- C. place SBTG Train 2/3A in OFF and then place SBTG Train 2/3B in START B.
- D. place SBTG Train 2/3A in OFF and leave SBTG Train 2/3B in OFF.

Answer:

Ref(s):

Question pedigree:

B

DOS 7500-2 Rev 22

New

Explanation/Comments:

Initiation signal received 2.0 psig in drywell. Per DOS 7500-2, actions should be to place non-running train to "PRI" and the train under test to "OFF"

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
34	BOTH	2	1.63	226001	K2.02	2.9* / 2.9*	203L-S1-03

A station blackout has occurred with the following events on Unit 2:

- The 2/3 Diesel Generator auto started and loaded.
- The U2 Diesel Generator could not be started.
- The SBO Diesel Generators have not been started yet.

At this time, the LPCI pumps available for containment spray are ...

- A. LPCI Pumps 2A and 2B.
- B. LPCI Pumps 2A and 2C.
- C. LPCI Pumps 2B and 2D.
- D. LPCI Pumps 2C and 2D.

Answer:

A

Ref(s):

SDM 203000

Question pedigree:

New

Explanation/Comments:

2/3 DG supplies Division One equipment. Division One LPCI pumps are the 2A and 2B pumps.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
35	BOTH	1	3.81	226001	K5.06	2.6 / 2.8	29501LK005

Drywell spray initiation at high drywell temperatures and pressures greater than 11 psig is prohibited due to the potential to ...

- A. implode the drywell due to leakage of nitrogen from the drywell and torus.
- B. implode the drywell due to limitations of the Drywell to Torus vacuum breakers.
- C. collapse the torus downcomer legs due to leakage of nitrogen from the drywell and torus.
- D. collapse the torus downcomer legs due to limitations of the Drywell to Torus vacuum breakers

Answer:

Ref(s):

Question pedigree:

D

295LC01

New

Explanation/Comments:

As drywell pressure rapidly drops from the spraying action, a dP is established inside the downcomer legs in the torus. The pressure in the leg drops with drywell pressure and the pressure outside the leg stays high do to the vacuum breakers not opening yet. A dP >8.4 psid would cause the downcomers to collapse; preventing the containment from performing its function.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
36	RO	2	2.75	230000	A3.01	3.4	203L-S1-08

A steam leak in the drywell occurred on Unit 3.

“A” LPCI was aligned for torus sprays as follows:

- Torus Spray Valve MO-301501-18A is OPEN with its control switch in AUTO
- Torus Spray Valve MO-301501-19A is OPEN with its control switch in AUTO
- Accident Spray Permissive keylock switch 3-1530-316A is in MANUAL
- 2/3 Core Coverage Override keylock switch 3-1530-317A is in OFF

Reactor water level subsequently dropped to -200 inches and was restored to +8 inches using HPCI.

Which of the following describes LPCI torus spray valves response to the level transient?

	MO-301501-18A	MO-301501-19A
A.	CLOSES	remains OPEN
B.	remains OPEN	remains OPEN
C.	remains OPEN	CLOSES
D.	CLOSES	CLOSES

Answer:

Ref(s):

Question pedigree:

D

SDM 203000

New

Explanation/Comments:

Both 3-316B and 3-317B switches must be placed in the MANUAL/MAN-OVERRD in order to prevent the spray valves from closing.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
37	BOTH	1	2.50	234000	A4.01	3.7 / 3.9	23400LK011

Unit 3 is in refueling and new fuel is being loaded into the core.

The Refueling Forman requests withdrawal of a control rod.

What is the MINIMUM count rate on the applicable SRM to perform this evolution?

- A. 2 cps
- B. 3 cps
- C. 4 cps
- D. 5 cps

Answer:

Ref(s):

Question pedigree:

B

DGP 03-04 Rev 36

New

Explanation/Comments:

Per reference, counts must be ≥ 3 .

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
38	BOTH	2	4.25	239002	K6.03	2.7* / 2.9*	239L-S1-03

Unit 2 was operating at rated power when the output from Instrument Bus power was lost.

The Unit NSO placed the 2B Electromatic Relief Valve (ERV) control switch to the MANUAL position.

The 2B ERV will ...

- A. remain closed.
- B. open and its position could be confirmed by tailpipe temperature.
- C. open and its position could be confirmed by acoustic monitoring.
- D. open and its position could be confirmed by BOTH tailpipe temperature AND acoustic monitoring.

Answer:

Ref(s):

Question pedigree:

C

239L-S1r19

New

Explanation/Comments:

Valve control power is 125 volt DC. Tailpipe temperature monitoring is powered by Instrument power. Acoustic monitoring is powered by ESS AC power

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
39	RO	2	3.00	241000	A1.24	2.6	245L-S1-03

Which of the following methods is utilized to minimize turbine eccentricity?

- A. Shell warming before Chest warming with the turbine ON the turning gear.
- B. Shell warming before Chest warming with the turbine OFF the turning gear.
- C. Chest warming before Shell warming with the turbine ON the turning gear.
- D. Chest warming before Shell warming with the turbine OFF the turning gear.

Answer:

Ref(s):

Question pedigree:

A

DOP 5600-05, Rev 04

New

Explanation/Comments:

The shell warming is started before chest warming (as soon as possible after seal steam is placed in operation) with the turbine on the gear to prevent uneven heating of the turbine rotor that would result in high eccentricity.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
40	BOTH	2	3.06	241000	K5.03	3.5 / 3.6	241L-S1-12

Unit 3 is operating at rated power.

A fully withdrawn control rod spuriously scrams.

Which of the following describes the INITIAL response of reactor pressure and Turbine Control Valve positions to this transient?

	<u>Reactor Pressure</u>	<u>TCV Positions</u>
A.	Decreases	Open slightly
B.	Decreases	Close slightly
C.	Remains constant	Open slightly
D.	Remains constant	Close slightly

Answer:

B

Ref(s):

SDM 241000

Question pedigree:

New

Explanation/Comments:

Reactor power will decrease with the control rod insertion. Reactor pressure will decrease as a result. As reactor pressure decreases, TCVs will close slightly to maintain the required throttle pressure.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
41	BOTH	2	3.50	245000	A3.05	3.0 / 3.1	24501LP003

A main turbine startup is in progress on Unit 3.

The following conditions exist:

- The turbine has been reset and the green RESET light is LIT.
- LOAD SET is at 0%.
- The CHEST / SHELL WARMING SELECT "OFF" button has been depressed.
- The CHEST WARMING / PUSH FOR SHELL WARM button has been depressed
- The PUSH FOR SHELL WARM portion of the button is LIT.

Which of the following describes expected valve positions?

	<u>Turbine Control Valves</u>	<u>Intermediate Stop Valves</u>
A.	Full Open	Closed
B.	Partially Open	Closed
C.	Full Open	Open
D.	Partially Open	Open

Answer:

Ref(s):

Question pedigree:

A

DOP 5600-05 Rev 4

New

Explanation/Comments:

During performance of DOP 5600-05, operators verify turbine control valves full open and intermediate stop valves closed at this point in the procedure.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
42	RO	1	2.50	245000	K4.10	2.6	260L-S1-8

What would an operator do to prevent the Feedwater Heater Extraction Valves from automatically closing?

- A. Place the control switch to the Pull-to-Stop position.
- B. Place the control switch to the OPEN position.
- C. Latch the valve in the OPEN position.
- D. De-energize the valve solenoid.

Answer:

Ref(s):

Question pedigree:

A

SDM 260000

ILT Bank #26000S0101

Explanation/Comments:

Placing the control switch in the OPEN position will NOT override automatic valve closure. Latching mechanism has no effect on Extraction MOVs. Extraction valves are MOVs not AOs (there are no solenoids).

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
43	RO	2	3.14	256000	K3.02	3.2	259L-S1-12

Unit 2 is at rated conditions.

Which of the following describes the response of CRD pump suction pressure to a trip of all condensate/condensate booster pumps?

CRD suction pressure will . . .

- A. remain constant.
- B. increase slightly and stabilize at higher value.
- C. decrease slightly and stabilize at a lower value.
- D. decrease rapidly until the pump trips.

Answer:

Ref(s):

Question pedigree:

C

SDM 201001

New

Explanation/Comments:

As the condensate/condensate booster pumps trip, the reject flow CST will decrease. In addition, the reactor will scram on low level. As the reject flow from condensate decreases and the flow to the vessel increases, CRD suction pressure will decrease and stabilize at a lower value. Suction pressure will be provided by the normal level in the CST.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
44	BOTH	1	3.00	256000	K6.01	2.8 / 2.8	259L-S1-12

On a loss of instrument air pressure, the Condensate Booster Pump Recirculation valve will ...

- A. open fully.
- B. close fully.
- C. lock-up and remain as is.
- D. close to the minimum blocked position.

Answer:

C

Ref(s):

SDM 259002

Question pedigree:

New

Explanation/Comments:

Condensate Booster Pump Recirculation valve movement is controlled by an air operated actuator using air pressure on both sides of an operating piston. When air is applied to the above piston area the valve closes, applied to the below piston area the valve opens. The valves are designed to lock-up on low Instrument Air pressure or a blown fuse (loss of signal). Lock-up is accomplished by preventing the pulse positioner from moving the valve.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
45	BOTH	2	3.00	259002	A2.06	3.3 / 3.4	259L-S2-12

Given the following Unit 2 conditions:

- Startup Mode.
- RPV Water Level is +30 inches.
- Low Flow Reg Valve is in AUTO.
- RPV Pressure is 800 psig.

If the Low Flow Reg Valve controller output signal fails to a low value, what actions need to be taken and why?

- A. Take MANUAL control and shut the Low Flow Reg Valve since level will increase.
- B. Take MANUAL control and open the Low Flow Reg Valve since level will decrease.
- C. Transfer control to the 2B Main Feed Reg Valve since the Low Flow Reg Valve is locked up.
- D. Utilize the Pull-to-Stop feature of the Low Flow Reg Valve Isolation to control flow since the Low Flow Reg Valve is locked up.

Answer:

B

Ref(s):

DAN 902-6 H-3
DOA 0600-01

Question pedigree:

Revised LORT Bank #2 25902B0231

Explanation/Comments:

The output signal failing low will cause the Low Flow Feed Reg Valve to close. This will result in a decreasing trend in RPV water level. Low Flow Feed Reg Valve will only lock up on a loss of air and a TOTAL loss of signal (i.e. Blown Fuses)

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
46	RO	2	3.36	259002	A3.01	3.0*	259L-S2-12

A transient has occurred on Unit 2. The following conditions exist:

- Reactor is scrammed.
- Reactor water level is –35 inches and decreasing.
- RFPs 2B and 2C are not available.
- The NSO informed the Unit Supervisor that feedwater flow stopped increasing just below 6×10^6 lbm/hr.

Which of the following identifies why feedwater flow stopped increasing?

The FRV is in ...

- A. MANUAL and is limited by the Feedwater Flow Limiter.
- B. MANUAL and is limited by the Setpoint Setdown function.
- C. AUTOMATIC and is limited by the Feedwater Flow Limiter.
- D. AUTOMATIC and is limited by the Setpoint Setdown function.

Answer:

Ref(s):

Question pedigree:

C

SDM 259002, 6.J.

New

Explanation/Comments:

With a single RFP running, the Feedwater Flow is limited to 5.6×10^6 lbm/hr. When reached, FRVs in automatic are blocked to prevent opening any further. Setpoint Setdown does not restrict valve demand below –30 inches.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
47	BOTH	2	2.25	261000	A3.02	3.2 / 3.1	261L-S1-5, a&b

Unit 2 & 3 were at rated power with the following conditions:

- A SBTG train was in PRIMARY.
- B SBTG train was in STANDBY.

An event occurred resulting in the following:

- Unit 2 Drywell at 4 psig internal pressure.
- Bus 39 tripped on overcurrent.

What is the expected status of the SBTG system one (1) minute later?

- A. A SBTG train is operating normally.
- B. B SBTG train is operating normally.
- C. BOTH SBTG trains are operating with equal flow.
- D. NEITHER SBTG train is operating.

Answer:

Ref(s):

Question pedigree:

A

DAN 923-5, A06, B06 Rev 8

LORT Bank #11 26100B0121

DOA 7500-01 Rev 12

SDM 261000

Explanation/Comments:

A SBTG will start since it is selected for PRIMARY. As a result B SBTG will NOT receive a start signal. If it had, it would not start due to lack of power.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
48	BOTH	2	3.69	262002	A1.02	2.5 / 2.9	26206LK001

Unit 2 was operating at rated conditions with recirculation in Master Manual when the ESS AC Power output was lost.

The reactor recirculation MG sets ...

- A. scoop tubes will lock up since power is lost to the master and individual controllers.
- B. will NOT be affected since the all speed controllers are supplied by instrument power.
- C. will NOT be affected since only the individual controllers are supplied by ESS AC power.
- D. scoop tubes will transfer to the individual controllers since power is lost to the master controller.

Answer:

Ref(s):

Question pedigree:

A

SDM 202002

New

Explanation/Comments:

Both master and individual controllers will lose power causing the scoop tube to lock up. Knowledge of power supply and affect on loss of power.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
49	SRO	1	4.00	263000	2.1.32	3.8	263L-S1-07

During a failure of 250 VDC system, paralleling Unit 2 and Unit 3 250 VDC systems is prohibited unless certain operational requirements are met.

This is because paralleling 250 VDC ...

- A. utilizes WIRING that was NOT analyzed for cross-connected operation.
- B. utilizes BREAKERS that were NOT analyzed for cross-connected operation.
- C. exceeds system design loading requiring at least ONE unit be at least in Cold Shutdown.
- D. exceeds system design loading requiring BOTH units be at least in Cold Shutdown.

Answer:

Ref(s):

Question pedigree:

D

DOA 6900-04. Rev 8

New

Explanation/Comments:

If the other units battery is used to restore power to a bus which is not part of its normal configuration, the remain battery also becomes inoperable because it is outside it design load profile.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
50	RO	2	3.86	263000	K3.02	3.5	262LC01-05

Unit 3 is operating near rated power.

- Reactor Feed Pumps (RFP) 3A and 3B are operating.
- RFP 3C is selected for standby.

Which of the following describes the response of the Unit 3 Reactor Feed Pumps to the loss of control power to the RFP 3A breaker and the loss of power to the Low Lube Oil Pressure Trip relays from the 125 VDC Distribution Panel?

	RFP 3A	RFP 3B	RFP 3C
A.	continues to operate	continues to operate	remains idle
B.	continues to operate	trips	automatically starts
C.	trips	continues to operate	automatically starts
D.	trips	trips	automatically starts

Answer:

Ref(s):

Question pedigree:

A

DOA 6900-T1 Rev 10

New

Explanation/Comments:

The RFP Low Oil Press trip logic, supplied from the breaker control power, was modified to energize-to-trip from de-energize-to-trip. Nothing happens for this casualty.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
51	BOTH	2	3.13	264000	A3.03	3.4 / 3.4	26204LK005

An off-site event occurs which results in a TOTAL LOSS of power to Unit 3.

The following is noted 15 seconds AFTER the loss of power.

- The 2/3 EDG has auto-started AND has auto-closed to Bus 33-1.
- The Unit 3 EDG has auto-started but has NOT auto-closed.
- EDG 3 voltage indicates 4200 volts.
- EDG 3 frequency indicates 58.2 Hz.
- The Auxiliary Power System has otherwise responded as designed.

Which of the following explains why the U3 EDG output breaker did NOT close?

- A. EDG 3 voltage is too high.
- B. EDG 3 frequency is too low.
- C. The 30-second time delay relay has NOT timed out.
- D. The closing of EDG 2/3 precludes the closing of EDG 3 output breaker.

Answer:

B

Ref(s):

264L-S1

Question pedigree:

LORT Bank #10 26400B0231

Explanation/Comments:

Auto Close feature on EDG output breaker requires Frequency near normal (greater than approx. 59 hertz) Nominal speed and voltage (900rpm , 4160 volt). There is no output breaker interlock between 2/3 EDG and Unit 3 EDG.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
52	BOTH	1	1.63	264000	K1.05	3.2 / 3.3	264L-S2-03

Each Emergency Diesel Generator (EDG) fuel oil day tank is refilled by a fuel oil transfer pump that is started _____ and transfers fuel oil stored in _____ fuel oil storage tank.

- A. Automatically from day tank level switches a common
- B. Automatically from day tank level switches its own
- C. manually by an operator a common
- D. manually by an operator its own

Answer:

B

Ref(s):

SDM 264001, 2.E.

Question pedigree:

New

Explanation/Comments:

Each EDG has its own Fuel oil storage and day tanks. The fuel oil transfer pump controls day tank level automatically, cycling off level switches in the day tank.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
53	SRO	2	3.75	288000	2.1.12	4.0	223L-S5-07a.

Provide copy of Technical Specifications Section 3.2.A and Table 3.2.A-1.

Unit 2 is operating at rated power.

- The 902-3 G-15, RX BLDG VENT CH B DOWNSCALE, annunciator alarms.
- The Channel B radiation monitor on the 902-10 panel indicates downscale.
- All other indications are normal.

What action(s) is (are) required by the applicable Tech Spec(s)?

- A. Restore Reactor Bldg Vent Monitor Channel B to operable status within 12 hours or place the monitor in the tripped condition.
- B. Restore Reactor Bldg Vent Monitor Channel B to operable status within 24 hours or establish Secondary Containment Integrity with the Standby Gas Treatment system operating within the next one hour.
- C. Restore Reactor Bldg Vent Monitor Channel B to operable status within 1 hour or establish Secondary Containment Integrity with the Standby Gas Treatment system operating within the next one hour.
- D. Place Reactor Bldg Vent Rad Monitor Channel B in the tripped condition within one hour. Restore the inoperable monitor to operable status with its trip setpoint adjusted to less than or equal to 10 mR/hr.

Answer:

Ref(s):

Question pedigree:

B

TS 3.2.A, Action 2 and Footnote (a)

LOC Exam Bank #14 22302B0301

TS Table 3.2.A-1

Explanation/Comments:

The Reactor Bldg Vent Monitor contain a bug source to prevent them from going downscale. The monitor would have to be declared inoperable if it were downscale.

With one of the Rad Monitors inoperable, the minimum number is not bet for one of the two trip systems. If the rad monitor is placed in the tripped condition, a trip would occur so the footnote (a) on Tech Spec page 3/4.2-1 applies.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
54	BOTH	2	2.50	288000	K4.03	2.8 / 2.9	288L-S1-06.b

Unit 2 Reactor Building Vent system lineup was:

- 2A and 2B vent fans running, 2C in AUTO.
- 2A and 2B exhaust fans running, 2C in AUTO.

The following event occurred:

- 2A vent fan back-draft damper failed closed.

Which of the following describes the response of the Unit 2 Rx Bldg Vent system?

The _____ (1) will trip the 2A vent fan and the 2C vent fan will auto start on _____ (2).

- | | (1) | (2) |
|----|----------------------------------|----------------------------------|
| A. | the low flow switch | low Rx Bldg pressure |
| B. | the low flow switch | low flow through the 2A vent fan |
| C. | back-draft position limit switch | low Rx Bldg pressure |
| D. | back-draft position limit switch | low flow through the 2A vent fan |

Answer:

Ref(s):

Question pedigree:

B

288L-S1

New

Explanation/Comments:

Low flow through a fan will trip the fan. There is no direct trip off the back draft position.

Low flow through a running fan will auto start a vent (supply) fan. Low Rx Bldg pressure will trip the exhaust fans.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
55	RO	1	3.14	290001	A4.09	3.2	272L-S2-05

Unit 2 and Unit 3 are operating at rated conditions.

The 3A Reactor Building Ventilation Radiation Monitor was failed downscale.

Which of the following describes the expected ventilation alignment if the 3B Reactor Building Ventilation Radiation Monitor subsequently failed downscale?

	<u>U2 Reactor Bldg Ventilation</u>	<u>U3 Reactor Bldg Ventilation</u>	<u>SBGT</u>
A.	Running	Running	Standby
B.	Running	Tripped and Isolated	Standby
C.	Tripped and Isolated	Tripped and Isolated	Running
D.	Running	Tripped and Isolated	Running
Answer:		Ref(s):	Question pedigree:
C		DAN 902(3)-3 G-14, Rev. 08	New

Explanation/Comments:

Both Reactor Building Vent Rad Monitors downscale on one unit or one high rad on either unit will result in a Reactor Building ventilation system isolation for both Units 2 and 3 and an automatic start of SBGT.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
56	RO	2	3.50	290001	K4.03	2.8	268L-S1-05

The Unit 2 RBEDT VLVS CONT is in AUTO (RECIRC).

A drywell leak results in the following conditions on Unit 2:

- reactor water level is -30 inches and stable.
- drywell pressure is 1.6 psig and stable.

If the RBEDT TEMP HI alarm were to actuate, ...

- A. U2 RBEDT PP 2-2042 would START, RBEDT PP DISCH VLV AO 2-200-8 would CLOSE, and RECIRC VLV AO 2-2001-15 would OPEN.
- B. U2 RBEDT PP 2-2042 would START, RBEDT PP DISCH VLV AO 2-200-8 would OPEN, and RECIRC VLV AO 2-2001-15 would OPEN.
- C. U2 RBEDT PP 2-2042 would START, RBEDT PP DISCH VLV AO 2-200-8 would CLOSE, and RECIRC VLV AO 2-2001-15 would CLOSE.
- D. No automatic actions occur.

Answer:

Ref(s):

Question pedigree:

D

DAN 923-4 B-3, Rev 01A

New

Explanation/Comments:

According to DAN 923-4 B-3 no automatic actions will occur if a Group 2 Isolation exists. A Group 2 Isolation will have occurred since reactor water level is below +8 inches.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
57	RO	I	3.00	290003	A4.04	2.8	288L-S3-9

The Control Room HVAC is in a normal alignment.

CONTROL ROOM STBY HVAC MAJOR TROUBLE (923-1 B-4) annunciates.

Which of the following the conditions would cause the alarm to come in?

- A. An ammonia spill upwind of the plant.
- B. A large grass fire upwind of the plant.
- C. Snow buildup on the supply filters.
- D. A sudden increase in atmospheric pressure.

Answer:

Ref(s):

Question pedigree:

C

DAN 923-1 B-4, Rev. 04

New

Explanation/Comments:

Toxic gas concentration high is an input into alarm 923-1 B-4. High smoke concentrations would place the ventilation system in 100% recirculation. Snow buildup on the supply filters would cause annunciator 923-5 F-2, Control Room Supply Filter DP Hi to alarm. Sudden changes in atmospheric pressure would not impact this annunciator.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
58	BOTH	1	3.13	295002	AK3.01	3.7/3.8	212L-S1-05

The purpose of the Main Condenser low vacuum scram is to ...

- A. anticipate the turbine stop valve closure scram.
- B. anticipate the turbine control valve fast closure scram.
- C. prevent the fuel cladding integrity Safety Limit from being exceeded.
- D. prevent the fuel cladding integrity Operating Limit from being exceeded.

Answer:

Ref(s):

Question pedigree:

A

SDM 212000, 6.F.

New

Explanation/Comments:

Per the reference, the low vacuum scram is initiated to anticipate the stop valve closure scram.

The Turbine Stop Valve closure scram is to prevent the fuel cladding integrity Safety Limit from being exceeded.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
59	BOTH	1	2.38	295003	AK1.0 6	3.8 / 4.0*	264L-S3-06.b.

Given the following conditions:

- The site has experienced a total loss of offsite power concurrent with a failure of all EDGs.
- The decision was made to evacuate the Main Control Room before the SBO DGs could be started.

The earliest that power to Unit 2 can be restored is when ...

- A. the U2 SBO diesel is started using a local emergency start.
- B. offsite power is restored since the U2 SBO DG cannot be started from outside the control room.
- C. the U2 SBO DG auto starts after the 4 kV vital buses have been without power for 30 minutes.
- D. the U2 SBO DG is started using a normal start sequence from the 923-74 panel.

Answer:

A

Ref(s):

264L-S3

Question pedigree:

ILT Bank #26403S0041 (Revised)

Explanation/Comments:

Engineering studies have shown that control room temperature is the limiting concern on a total loss of AC power, with the control room becoming uninhabitable within an hour. With the control room unavailable, the SBO system must be operated locally. Local operation (excluding maintenance testing) is restricted to emergency operations. Therefore, only alternative (a) is correct for the conditions stated in the stem.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
60	BOTH	2	3.25	295004	AA1.03	3.4 / 3.6	26205RK001

Given the following conditions:

- Unit 2 was operating at rated power when a severe fire broke out in the control room.
- DSSP 0100-CR was being executed and control of the plant was being established locally.
- Due to another fault, 125 Vdc Main Bus 3A was lost.
- The main feed breaker at Bus 38 was OPEN.
- Power must be restored to Bus 38.

How is the feed breaker to Bus 38 CLOSED?

- A. Take the breaker control switch on the 903-8 panel to CLOSE.
- B. Plug in the local pushbutton control station AND depress the close button.
- C. Reset the Bus 38 undervoltage trip and take the breaker control switch on the 903-8 panel to CLOSE.
- D. Use the ratchet type maintenance handle to discharge the closing springs and close the breaker contacts.

Answer:

D

Ref(s):

DSSP 0100-CR

Question pedigree:

LOC Exam Bank #9 06000B0112

Explanation/Comments:

This type of breaker is normally operated using a closing spring. Under normal conditions, this spring is only charged to the "pre-charged". Because of this, there IS NO closing push button. On loss of control power the closing springs must be fully charged using a "ratchet" type operator. Once fully charged the closing springs will discharge and close the breaker.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
61	BOTH	2	3.50	295005	AK2.05	2.6/2.7	260L-S1-05

Unit 3 is operating at 35% reactor power.

Reactor water level increased to +56 inches during a feedwater transient.

Which of the following describes the EXPECTED positions of the Extraction Bypass Valves and the Extraction Non-Return Check Valves?

	<u>Extraction Bypass Valves</u>	<u>Extraction Non-Return Check Valves</u>
A.	CLOSED	OPEN
B.	CLOSED	CLOSED
C.	OPEN	OPEN
D.	OPEN	CLOSED

Answer:

D

Ref(s):

SDM 260000

Question pedigree:

New

Explanation/Comments:

On turbine trip the air dump relay dumps air to extraction bypass valves and extraction non-return check valves.

The extraction bypass valves fail open on loss of air.

The extraction non-return check valves close as steam flow through the turbine decreases.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
62	SRO	2	2.88	295007	2.4.1	4.6	29502LP001

Unit 3 was operating at rated power with the following equipment OOS:

- EHC Pump 3A
- Isolation Condenser

EHC Pump 3B tripped and the following alarms were received:

- 903-7 A-6, EHC SYSTEM PRESS LO
- 903-7 C-5, TURB TRIPPED EHC OIL PRESS LO
- 903-5 A-12, CH A/B STOP VLVS CLSD
- 903-5 C-13, CHANNEL A/B RPV PRESS HI-HI
- 903-4 A-15, ISOL CONDR CH A/B INITIATION

The operating crew should enter _____ and can stabilize reactor pressure using _____.

- A. DGP 02-03; turbine bypass valves.
- B. DGP 02-03; ADS valves in the preferred sequence.
- C. DEOP 100; turbine bypass valves.
- D. DEOP 100; ADS valves in the preferred sequence.

Answer:

Ref(s):

Question pedigree:

D

DEOP 100 Rev 09

New

Explanation/Comments:

The CH A/B STOP VLVS CLOSED alarm indicates that a reactor scram did or should have occurred.

The RPV Press HI-HI and IC Initiation alarms indicates that reactor pressure exceeded 1060 psig, a DEOP 100 entry condition.

The MSIVs should still be open but the turbine bypass valves are not available since EHC pressure is lost. The isolation condenser is OOS so ADS would be an option for pressure control.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
63	BOTH	1	1.50	295007	AA1.04	3.9 / 4.1*	239L-S1-04

The 202-3D Electromatic Relief Valve acoustic monitor GREEN and AMBER indicating lights are lit.
What does this indicate?

- A. The valve opened and now is closed.
- B. The valve opened and pressure is still above the lift setpoint.
- C. The valve is closed and a trouble condition exists for that monitor.
- D. The valve is closed and an opening time delay is in effect.

Answer:

Ref(s):

Question pedigree:

A

239L-S1

ILT Exam Bank #23901S0151 (Modified)

Explanation/Comments:

Green: Indicates valve is closed.

Amber: Indicates the valve had been open some time in the past.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
64	RO	2	2.75	295008	AA1.09	3.3	20400LP001

Unit 3 was starting up with reactor pressure at 400 psig when a scram occurred.

A Group III isolation occurred as a result of the level transient.

Reactor water level is 5 inches and increasing.

Which of the following methods should be utilized to limit the reactor water level increase?

Reset the Group III isolation and establish blowdown flow to the ...

- A. Radwaste System after starting the Auxiliary RWCU pump.
- B. Main Condenser after starting the Auxiliary RWCU pump.
- C. Radwaste System without starting any RWCU pumps.
- D. Main Condenser without starting any RWCU pumps.

Answer:

Ref(s):

Question pedigree:

D

DOP 1200-02 Rev. 14

New

Explanation/Comments:

Attachment 1 of DOP 1200-02 may be utilized to provide a short term method to drop RPV water level following a reactor scram. It relies on PRV pressure or main condenser vacuum to provide the motive force to reject reactor water.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
65	BOTH	2	3.75	295008	AK1.03	3.2 / 3.2	259L-S2-12

Given the following plant conditions:

- Unit 3 is operating at rated power.
- Narrow Range Level A transmitter is selected for FWLCS control.
- 3-Element mode is active with both FWRV controllers in AUTO.
- 3A and 3B RFPs are running.
- FRVs are in MASTER AUTO set at +30 inches.

The 3A RFP flow transmitter equalizing valve develops a leak from the high pressure tap to the low pressure tap causing flow indication to change by 1.0 Mlbm/hr.

Which of the following describe the expected response of the Feedwater Level Control System (FWLC)?

FWLC will ...

- A. initially increase flow to the vessel to match feedwater flow to steam flow.
Then FWLC will decrease flow to the vessel to re-establish reactor water level at the level setpoint.
- B. initially increase flow to the vessel to match feedwater flow to steam flow.
Then FWLC will decrease flow to the vessel to stabilize reactor water level at a higher level than the level setpoint.
- C. initially decrease flow to the vessel to match feedwater flow to steam flow.
Then FWLC will increase flow to the vessel to re-establish reactor water level at the level setpoint.
- D. initially decrease flow to the vessel to match feedwater flow to steam flow.
Then FWLC will increase flow to the vessel to stabilize reactor water level at a lower level than the level setpoint.

Answer:

A

Ref(s):

SDM 259002

Question pedigree:

New

Explanation/Comments:

The leaky equalizing valve will cause the flow transmitter to indicate flow lower than actual flow. As the lower flow is sensed, FWLC will increase feedwater flow demand to match the steam flow signal. As reactor water level increases, FWLC will decrease the feedwater flow demand until level returns to the desired setpoint.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
66	BOTH	2	2.25	295009	2.4.1	4.3 / 4.6	2590LK017

Unit 2 was operating at rated power when a station blackout occurred.

Conditions are:

- all control rods fully inserted.
- reactor pressure is 1020 psig and increasing.
- reactor water level is +7 inches and decreasing.

The level control strategy should be to maintain RPV level with (1) in accordance with (2).

	(1)	(2)
A.	CRD and HPCI	DGP 02-03
B.	HPCI	DGP 02-03
C.	CRD and HPCI	DEOP 100
D.	HPCI	DEOP 100

Answer:

D

Ref(s):

DEOP 100

Question pedigree:

New

Explanation/Comments:

With reactor water level below 8 inches, DEOP 100 entry is required. With a station blackout in progress, CRD pumps would not be available.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
67	BOTH	1	2.25	295010	AK2.01	3.2 / 3.3	223L-S1-01

Provide DOP 1600-02 Rev 10 Attachment A.

If Drywell pressure was 1.9 psig.

Which of the following represent UNSAFE torus parameters?

	Torus Pressure	Torus Level
A.	0.5 psig	- 4.5 inches
B.	1.3 psig	-4.5 inches
C.	1.3 psig	-2.0 inches
D.	0.5 psig	-2.0 inches

Answer:

Ref(s):

Question pedigree:

A

DOP 1600-02 Rev 10

New

Explanation/Comments:

Only 1.4 psid and -4.5 inches fall in the UNSAFE region of DOP 1600-02 Attachment A.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
68	BOTH	1	2.13	295010	AK3.03	3.2 / 3.5	223L-S3-06

A RWCU leak in the drywell has occurred on Unit 3.

Drywell pressure is 3.0 psig and all systems have responded as expected.

What action(s), if any, are needed for operations of the Drywell Radiation Monitors?

- A. None. The monitors were automatically started by an ECCS initiation signal.
- B. None. The monitors are active during normal and post-accident conditions.
- C. Bypass the Group 2 isolation and manually start the monitors..
- D. Select the sample point (torus or drywell) and manually start the monitors.

Answer:

Ref(s):

Question pedigree:

B

SDM 223006

New

Explanation/Comments:

The drywell radiation monitors are operating during normal and post accident conditions.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
69	SRO	2	3.50	295012	AA2.02	4.1	29501LP004

What are the consequences of initiating DRYWELL SPRAY at a drywell temperature of 500°F and a drywell temperature of 5 psig?

- A. A controllable pressure drop without damaging the containment.
- B. An uncontrollable pressure drop and possible implosion of the drywell.
- C. An uncontrollable pressure increase due to superheating of the spray water.
- D. An uncontrollable pressure drop within the capabilities of the drywell to torus vacuum breakers..

Answer:

Ref(s):

Question pedigree:

B

295LC01r1

New

Explanation/Comments:

The conditions given place the containment to the left of the straight line starting at ~2 psig and extending to 11 psig. The imminent concern is the implosion of the drywell.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
70	SRO	2	3.25	295013	2.4.1	4.6	29502LP019

Unit 3 was operating at 50% power with the HPCI pump and system operability surveillance in progress.

Alarm 903-4 A-18, DIV 1 TORUS WTR BULK TEMP HI, was received.

What action(s) should be taken?

- A. Enter DEOP 200-1 and operate all available torus cooling.
- B. Check torus bulk temperature and if above 95°F then scram and enter DEOP 100 and DEOP 200-1.
- C. Check torus bulk temperature and if above 95°F then enter DEOP 200-1 and operate all available torus cooling
- D. Operate all available torus cooling and monitor torus temperature. Entry into DEOP 200-1 is not required since the high torus temperature is from a planned surveillance.

Answer:

Ref(s):

Question pedigree:

C

DAN 902(3)-4 A-18 Rev 14
DEOP 200-1

New

Explanation/Comments:

TORUS WATER BULK TEMP HI alarms at or BEFORE 90°F. DEOP 200-1 entry on High Torus Water Temp is 95°F. DEOP 200-1 torus temp leg (point 19) directs operators to operate all available torus cooling.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
71	BOTH	2	4.00	295026	EA2.01	4.1* / 4.0	223L-S1-09

Unit 2 is at rated conditions. TIRS 2-1640-200A is OOS due to a failed power supply.

Instrument Mechanics report the averaging function of TIRS 2-1640-200B, Torus Temperature Monitoring, is NOT functioning properly.

TIRS 2-1640-200B currently indicates the following:

Point 1	112°F	Point 5	85°F
Point 2	95°F	Point 6	85°F
Point 3	90°F	Point 7	87°F
Point 4	85°F	Point 8	90°F

What actions (if any) are required based on the current readings?

- A. Enter DEOP 200-1 because two readings satisfy the entry requirements.
- B. No actions are required at this time.
- C. Enter DEOP 200-1 because the average reading satisfies the entry requirements.
- D. Immediately place the mode switch in Shutdown.

Answer:

B

Ref(s):

SDM 223001

Question pedigree:

New

Explanation/Comments:

Bulk water temperature is the average of points 1 through 8. Average water temperature would be 91.125°F. No action is required.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
72	BOTH	2	2.75	295014	AK2.01	3.9 / 4.1	24501LK021

A startup is in progress on Unit 3 with the following conditions:

- Reactor pressure is 170 psig.
- One bypass valve is full open.
- Control rods are being withdrawn to achieve two bypass valves open.
- IRMs are between 30 and 70 on range 8.

Which of the following would be expected to occur if ALL bypass valves were to fail closed with no operator action?

- A. The reactor would scram due to high flux.
- B. The reactor would scram due to high pressure.
- C. Reactor power would increase and stabilize due to the change in void fraction.
- D. Reactor power would decrease and stabilize due to the change in void fraction.

Answer:

Ref(s):

Question pedigree:

A

DGP 01-01, Rev. 90

New

Explanation/Comments:

Large increases in reactor pressure at the above conditions would result in a reactor scram due to high flux.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
73	RO	1	3.50	295014	AK3.01	4.1*	212L-S1-5a

The setting for the turbine stop valve closure scram limits the increase in fuel surface heat flux such that _____, even during the worst case accident.

- A. the value of MCPR remains BELOW the fuel cladding integrity Safety Limit.
- B. the value of MCPR remains ABOVE the fuel cladding integrity Safety Limit.
- C. the value of APLHGR remains BELOW the fuel cladding integrity Safety Limit.
- D. the value of APLHGR remains ABOVE the fuel cladding integrity Safety Limit.

Answer:

Ref(s):

Question pedigree:

B

212L-S1

New

SDM 212000

Explanation/Comments:

The Turbine Stop Valve closure scram function alone is adequate to prevent the clad Safety Limit from being exceeded in the event of a Turbine trip transient with Bypass Valve closure.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
74	BOTH	1	1.75	295015	AK3.01	3.4 / 3.7	29502LP022

An ATWS occurred on Unit 3.

To manually insert control rods, the RWM Mode Switch should be ...

- A. left in Normal since the rods should be driven in using the currently loaded sequence.
- B. left in Normal to allow the NSO to monitor control rod positions on the RWM screen.
- C. taken to Bypass to allow a new sequence to be loaded as provided by the QNE.
- D. taken to Bypass to remove any insert blocks generated by the Rod Worth Minimizer.

Answer:

Ref(s):

Question pedigree:

D

DEOP 0500-05 Rev 09

New

Explanation/Comments:

The RWM is bypassed to prevent RWM rod blocks interfering with efforts to reduce reactor power.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
75	BOTH	1	2.38	295016	AA1.06	4.0/4.1	299L-03-04

Unit 2 was scrammed and the control room evacuated.

Reactor water level is -88 inches.

Based on the above, reactor water level would be monitored at the Reactor Building ...

- A. 2202-5 and 2202-6 Instrument Racks
- B. 2202-5 and 2202-7 Instrument Racks
- C. 2202-6 and 2202-7 Instrument Racks
- D. 2202-7 and 2202-8 Instrument Racks

Answer:

Ref(s):

Question pedigree:

D

DSSP 0100-CR

LOC Exam Bank #1 21600B0021

216L-S1

Explanation/Comments:

These are the only instrument racks that will provide level indication in the stated range.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
76	SRO	2	2.50	295017	2.4.1	4.6	29502LK056

Unit 2 and 3 were operating at rated power.

A transient occurred that resulted in the following:

- Unit 2 scram and a steam leak in the turbine building.
- U2/3 Chimney gas radiation is above the GSEP Alert level
- BOTH Unit 2 AND Unit 3 turbine building ventilation fans tripped.

Which of the actions below should be taken?

- A. Restart Unit 2 turbine building ventilation ONLY.
- B. Restart Unit 3 turbine building ventilation ONLY.
- C. Restart BOTH Unit 2 AND Unit 3 turbine building ventilation.
- D. Leave BOTH Unit 2 AND Unit 3 turbine building ventilation OFF.

Answer:

Ref(s):

Question pedigree:

C

DEOP 300-2

New

Explanation/Comments:

With chimney radiation above the GSEP Alert level, DEOP 300-2 entry is required. The first step of the procedure is to Operate Turbine Building Ventilation.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
77	BOTH	2	2.50	295017	AK1.02	3.8* / 4.3*	29502LK058

Which of the following would require emergency depressurization to protect the general public?

Offsite release rate is approaching the General Emergency level and...

- A. an unisolable leak from fuel pool cooling is discharging into the radwaste building.
- B. an unisolable leak from the turbine bypass valves is discharging into the turbine building.
- C. an unisolable leak from RWCU piping and is discharging into the RWCU demin room.
- D. an unisolable leak from the HPCI turbine steam inlet piping is discharging into the HPCI room.

Answer:

Ref(s):

Question pedigree:

B

DEOP 300-2, Rev. 1

New

Explanation/Comments:

A primary system must be discharging outside the primary and secondary containments and be approaching the General Emergency level in order to emergency depressurize the reactor. Fuel pool cooling is not a primary system. RWCU demin room and HPCI rooms are within the containment.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
78	RO	1	4.50	295017	AK2.05	3.4	272L-S4-06

Increasing release rates due to fuel failure on Unit 2 have resulted in the Unit 2/3 Chimney radiation monitoring system switching to Phase 1 operation.

Which of the following describes the monitoring system response?

- A. The SPING sample system trips off and the Victoreen unit initiates
- B. The GE Chimney radiation monitor initiate and isolate the SPING sample system
- C. Phase 1 operation initiates a closure of U2 SJAE Suction valves and Chimney isolation valve after a 15 minute time delay.
- D. The SPING sample system continues to operate until the Victoreen System is manually started and the SPING system manually secured

Answer:

A

Ref(s):

272L-S4

Question pedigree:

ILT Exam Bank 27204S0111

Explanation/Comments:

When switching to Phase 1 operation, the SPING system sample pump will trip and the Victoreen system initiates aligning to PAARM-4..

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
79	RO	1	3.00	295020	AA2.03	3.7	215L-S1-5.a.

A spurious Group 2 isolation occurred on Unit 3 and has been reset.

Concerning the TIP system, the following conditions exist:

- Group 2 TIP Isolation status light is extinguished.
- All TIP Ball Valves are closed.

A TIP trace is going to be run to check LPRM readings.

Prior to performing the TIP trace, the NSO would ...

- A. place the Drive Control Unit mode switch to MAN.
- B. select the Flux Probing Monitor to OFF.
- C. verify the Drive Control Unit ready light is illuminated.
- D. press the Group 2 TIP Isolation Reset Button.

Answer:

Ref(s):

Question pedigree:

D

DOP 0700-06, Rev. 14

ILT Exam Bank #21501S0141

Explanation/Comments:

The TIP Ball Valve control circuitry is sealed out following a Group 2 isolation until the reset button is depressed. The status light being out indicates that the Ball control circuitry is sealed out so the reset button must be depressed.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
80	BOTH	2	3.38	295020	AK3.08	3.3 / 3.5	223L-S5-05

Unit 2 was operating at rated power when an IMD surveillance resulted in an inadvertent Group 2 isolation.

The Group 2 isolation has not been reset.

Which of the following describes the affect on Unit 2 torus pressure?

Unit 2 torus pressure will ...

- A. remain unchanged since the Drywell to Torus Differential Pressure PCV is supplied nitrogen to operate by the Drywell Pneumatic Receiver.
- B. remain unchanged since the torus will automatically vent to control pressure.
- C. increase since the suction path to the pumpback compressor is lost.
- D. increase since nitrogen will be added to the torus by the Nitrogen Backup Valve.

Answer:

Ref(s):

Question pedigree:

C

SDM 223007

New

Explanation/Comments:

The pumpback compressor suction path will be isolated by the Group 2 isolation. Torus pressure will slowly increase due to leakage through the Torus to Drywell vacuum breakers. The Drywell to Torus Differential Pressure PCV is supplied nitrogen to operate by the Drywell Pumpback Receiver. There is no automatic vent function for the torus. The Nitrogen Backup Valve supplies nitrogen to the drywell, not the torus.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
81	BOTH	2	2.63	295021	AK2.03	3.6 / 3.6	20500LK006

Unit 3 reactor was shutdown with two loops of shutdown cooling in operation.

- The reactor recirculation system was secured.
- Reactor water level is +40 inches (fuel zone).
- Reactor water temperature is 200°F.
- Bus 34-1 tripped on overcurrent.

Based on these conditions, the operator should ...

- A. check the reactor vessel metal temperature recorder on Panel 903-21 at least every four hours to detect possible temperature stratification.
- B. maintain reactor water level at or above +40 inches to provide a natural circulation flow path through the moisture separators.
- C. increase reactor water level a minimum of eight inches to prevent reactor vessel temperature stratification.
- D. use reactor vessel metal temperatures as an alternative method of determining reactor water temperature.

Answer:

Ref(s):

Question pedigree:

C

DOP 1000-03 Rev 41

LOC Exam Bank #1 20500B0011

Explanation/Comments:

Loss of bus 34-1 will cause a loss of one loop of shutdown cooling. When the recirculation system is secured and there is less than full flow through the Shutdown Cooling loops, reactor water level must be raised to greater than 48 inches to promote natural circulation through the core.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
82	BOTH	1	2.75	295021	AK3.04	3.3 / 3.4	29501LK046

Following a loss of shutdown cooling, RWCU system flow rate is (1) , if possible, in order to (2).

(1)

(2)

- A. increased maximize heat removal rate through the non-regenerative heat exchanger
- B. increased maximize heat removal rate through the regenerative heat exchanger
- C. reduced minimize the possibility of thermal stratification
- D. reduced minimize reactor vessel inventory loss

Answer:

Ref(s):

Question pedigree:

A

DOA 1000-01, Rev. 12

New

Explanation/Comments:

RWCU flowrate is raised to maximum to maximize the heat removal rate. Heat removal from the system is accomplished by the NRHX.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
83	SRO	2	3.00	295022	AA2.01	3.6	20101LK003

Unit 3 was at rated conditions.

- A trip of CRD pump 3B resulted in TWO peripheral control rod "ACCUMULATOR TROUBLE" alarms.
- The two control rods are at notch 48.
- An NLO reports accumulator pressure for alarming accumulators is 925 psig.

Which of the following describes the NEXT action that should be performed and the reason for that action?

<u>ACTION</u>	<u>REASON</u>
A. Scram the reactor.	To prove the ability of the CRD system to scram the reactor without reliance on the CRD drive water.
B. Scram the reactor.	To prevent a pattern of inoperable accumulators that would result in less reactivity insertion on a scram.
C. Start the standby CRD pump and insert one control rod one notch.	To prove the ability of the CRD system to supply drive water pressure to insert the control rods without the accumulator.
D. Start the standby CRD pump and insert one control rod one notch.	To prevent damage to the control rod drive mechanisms due to overheating.

Answer:

C

Ref(s):

DOA 300-01 Rev 17

Question pedigree:

New

Explanation/Comments:

Immediate action of DOA 300-01 is to start standby CRD pump. With accumulators inoperable, operators must prove the ability to insert control rods.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
84	BOTH	1	3.00	295022	AK2.07	3.4 / 3.6	201L-S1-01

What is the minimum reactor pressure that can provide the force required to scram the control rods by reactor pressure only?

- A. 300 psig
- B. 400 psig.
- C. 500 psig
- D. 600 psig

Answer:

B

Ref(s):

SDM 201003

Question pedigree:

New

Explanation/Comments:

Per ref, during a reactor pressure only scram, the drive cannot be scrambled below 400 psig.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
85	BOTH	2	3.14	295023	AA1.06	3.3 / 3.4	212L-S1-08

Fuel is being loaded on Unit 3 during a refueling outage.

The shorting links are removed.

Control rod drive maintenance is in progress when the wrong control rod is inadvertently withdrawn.

The following alarms and indications are received:

- 903-5 A-4, SRM HI/INOP alarms
- 903-5 B-12, CHANNEL A/B SRM HI-HI alarms
- Indicating light HI lit for SRMs 22 and 23.
- Indicating light HI-HI lit for SRM 22 only.

Based on the above, it is expected that the control rod inadvertently withdrawn would . . .

- A. SCRAM since the shorting links were removed and the HI-HI annunciator alarmed.
- B. NOT SCRAM since the shorting links were removed.
- C. SCRAM since the HI setpoint was exceeded on at least two SRM trip channels.
- D. NOT SCRAM since the HI-HI setpoint was exceeded on only one SRM.

Answer:

Ref(s):

Question pedigree:

A

SDM 215004

New

Explanation/Comments:

The control rod would scram since the shorting links were removed. The SRM scram circuit is then in a non-coincidence mode and any one SRM exceeding the HI-HI setpoint would result in a reactor scram.-

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
86	BOTH	1	3.25	295023	AK3.02	3.4 / 3.8*	23400LK015

Unit 3 is being refueled.

Which of the following would prevent moving the refuel platform toward the core?

- A. refueling platform is near the core and the fuel grapple is loaded and fully raised.
- B. refueling platform is near the core and the mode switch is in REFUEL.
- C. the mode switch is in REFUEL and one control rod is not fully inserted.
- D. the mode switch is in STARTUP and the refueling platform is near the core.

Answer:

Ref(s):

Question pedigree:

D

Fuel Handling and Refueling Equipment LP

ILT Exam Bank #29501S0351

Explanation/Comments:

The refuel platform is interlocked from motion near or over the core with the mode switch in startup.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
87	SRO	2	2.00	295024	EA2.01	4.4*	29502LP004 (SRO)

A Drywell leak and reactor scram have occurred on Unit 3.

Given the following conditions:

- Torus sprays have been initiated.
- Drywell temperature is 230°F (point 5) and 241°F (point 6).
- Drywell pressure is 7 psig and increasing.

If drywell pressure reaches 9.5 psig, the NSO would be directed to ...

- A. blowdown IAW DEOP 400-2.
- B. start ALL available drywell coolers.
- C. keep trying to lower drywell and torus pressure.
- D. trip recirculation pumps AND drywell coolers AND initiate drywell sprays

Answer:

Ref(s):

Question pedigree:

D

DEOP 200-1

ILT Exam Bank #29502S0792

Explanation/Comments:

At 9 psig concern focussed on primary containment pressure.

With pressure greater than 9 psig, operators are directed to 1) trip recirculation pumps 2) trip drywell cooling fans and 3) start drywell sprays provided Drywell Spray Initiation Limit is met.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
88	BOTH	2	3.25	295024	EA2.06	4.1 / 4.1	223L-S1-06

An unisolable HPCI steam leak occurred in the Unit 3 drywell while operating at 50% power.

Given the following conditions:

- Drywell pressure is 15 psig and increasing.
- The reactor is being cooled down using turbine bypass valves.
- Torus temperature has increased by two degrees.
- Torus pressure is 14 psig and increasing.

Based on the above, you conclude that . . .

- A. all equipment has operated as designed and torus conditions are as expected for the event.
- B. there is a stuck open Torus to Drywell vacuum breaker.
- C. there is a stuck open relief valve vacuum breaker.
- D. there is a broken ADSV tee-quencher.

Answer:

B

Ref(s):

SDM 223001

Question pedigree:

New

Explanation/Comments:

All equipment has not operated as designed based on marked rise of torus pressure with little or no rise in torus water temperature. A stuck open relief valve vacuum breaker would direct energy to torus water inventory raising temperature and minimizing torus pressure rise. A stuck open torus to drywell vacuum breaker directs energy to the torus air space as seen by marked pressure rise. The only energy input to water volume is surface heat transfer.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
89	BOTH	1	3.63	295025	EK1.06	3.5 / 3.6	29501LK025

A concern during the performance of DEOP 100 is the occurrence of swell and shrink causing RPV level fluctuations. These level fluctuations can then complicate level control actions.

Which of the following is performed to minimize RPV shrink and swell?

- A. Verify FWLCS in automatic.
- B. Inhibit ADS and initiate IC.
- C. Initiate IC and open ADSVs to lower RPV pressure to 945 psig.
- D. Maximize injection using Condensate/Feedwater or other preferred injection system.

Answer:

C

Ref(s):

295L-S1

Question pedigree:

New

Explanation/Comments:

SRV cycling at high reactor pressure will result in swell and shrink from the pressure fluctuations. The swell and shrink will then result in RPV level fluctuations. The SRV cycling is stopped by initiating IC and opening ADSVs to lower reactor pressure below the opening setpoint of the SRVs.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
90	BOTH	2	3.00	295026	EK3.02	3.9 / 4.0	29502LP020

An ATWS occurred on Unit 3 and relief valves are discharging to the torus.

Torus cooling is not available.

Based on the above, the limit of concern would be the ...

- A. Primary Containment Pressure Limit.
- B. Drywell Spray Initiation Limit.
- C. Heat Capacity Limit.
- D. Pressure Suppression Pressure.

Answer:

C

Ref(s):

DEOP 200-1

295LC01

Question pedigree:

New

Explanation/Comments:

With reactor at pressure and heat being added to torus, consideration should be given to heat capacity limit.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
91	BOTH	2	2.88	295028	EA1.03	3.9 / 3.9	29502LP015

A steam leak occurred in the Unit 3 drywell resulting in a drywell temperature of 170°F and drywell pressure of 2.2 psig.

Unit 3 drywell coolers are . . .

- A. tripped and should not be restarted.
- B. running and should be tripped for drywell spray.
- C. running and should continue to be run for drywell cooling.
- D. tripped and should be restarted by defeating the trip signals.

Answer:

D

Ref(s):

SDM 223007

DEOP 200-1

Question pedigree:

New

Explanation/Comments:

Since drywell pressure exceeded 2 psig, the drywell coolers were tripped by the ECCS initiation signal.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
92	SRO	2	3.25	295028	EA2.03	3.9	29501LP001

A LOCA has occurred on Unit 3.

Plant indications are as follows:

- Drywell temperature Point 9 is 350°F.
- Drywell temperature Point 10 is 355°F.
- Drywell pressure is 45 psig.
- Reactor pressure is 100 psig.
- Reactor water level indicators:
 - Fuel Zone A -110 inches
 - Fuel Zone B +40 inches
 - Medium Ranges -52 inches
- Reactor Building 545 elevation temperature is 203°F.

Based on the above, reactor water level . . .

- A. is -52 inches.
- B. is -110 inches.
- C. Cannot be determined.
- D. is presently being indicated (accurately) by both the Fuel Zone A and the Medium Range instruments.

Answer:

C

Ref(s):

DEOP 0010-00

DEOP 100

Question pedigree:

ILT Exam Bank 29502S0842

(modified)

Explanation/Comments:

None of the indicators meet Detail "C" requirements. Detail "B" is violated. Also independent indicators do not track.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
93	BOTH	1	2.50	295030	2.4.11	3.4 / 3.6	223L-S1-01

The torus water downcomer submergence limits are dependent on ...

- A. the drywell to reactor building differential pressure.
- B. the drywell to torus differential pressure.
- C. the torus to reactor building differential pressure..
- D. the reactor to torus differential pressure.

Answer:

B

Ref(s):

DAN 902(3)-4 C-23

Question pedigree:

New

Explanation/Comments:

DAN 902(3)-4 C-23, CAUTION, Tech Spec limits for Torus water level and downcomer submergence are dependent on Drywell-to-Torus dP.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
94	SRO	1	3.42	295031	EA2.04	4.8*	25902LK017

With steam cooling in progress, adequate core cooling is lost when RPV level is below (1) inches with injections sources, and (2) inches without injection sources.

	<u>(1)</u>	<u>(2)</u>
A.	-143	-164
B.	-164	-143
C.	-164	-185
D.	-185	-164

Answer:

C

Ref(s):

295L-02

Question pedigree:

New

Explanation/Comments:

-143 inches is TAF

-164 inches steam cooling with injection; -185 inches steam cooling without injection

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
95	BOTH	2	3.00	295031	EK2.03	4.2 / 4.3*	209L-S1-05

A loss of offsite power has coincided with a loss of coolant accident outside the drywell.

The Emergency Diesel Generators perform as expected.

Reactor water level has rapidly decreased below -59 inches.

Which of the following best describes the response of the core spray system?

The core spray pumps ...

- A. start immediately after power is available from an emergency diesel generator.
- B. start 10 seconds after RPV pressure drops below 350 psig.
- C. start immediately once the 8.5 minute timer times out.
- D. start 10 seconds after power is available from an emergency diesel generator.

Answer:

Ref(s):

Question pedigree:

B

SDM 209000

ILT Exam Bank #20901I08B_001A

Explanation/Comments:

No initiation signal present initially, on RPV low level you must also have either RPV pressure less than 350 psig or 8.5 minute timer timed out. Core Spray will start 10 seconds after RPV initiation signal is received and EDG is supplying the busses.

1st LPCI starts immediately, 2nd LPCI starts five seconds after that, and Core Spray starts five seconds after that.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
96	SRO	2	3.00	295033	2.4.1	4.6	29502LP017

Given the following conditions:

- A steam line rupture occurred in the HPCI room.
- Attempts to isolate the leak have been unsuccessful.
- All personnel have been evacuated from the reactor building.
- All room coolers are in operation.
- HPCI pump room temperature is 215°F
- HPCI pump room radiation level is 2600 mr/hr.

Which of the following describe the minimum actions required to control this event?

- A. Wait until another area exceeds its max safe value and then shutdown the reactor.
- B. Shutdown down the reactor.
- C. Scram the reactor, and enter DEOP 100.
- D. Scram the reactor, enter DEOP 100 and DEOP 400-2.

Answer:

C

Ref(s):

DEOP 300-1

Question pedigree:

LOC Exam Bank #1 29502B0492

(Significantly modified)

Explanation/Comments:

DEOP 300-1 entry conditions are met with radiation and temperature.

With a unisolable primary system discharging into the reactor building, a scram and DEOP 100 entry is required.

Although there are two areas above max safe values, they are not of the same parameter so a blowdown is not required.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
97	BOTH	1	3.25	295034	EK1.01	3.8 / 4.1	29502LK050

Unit 3 was at rated conditions when a transient occurred.

- An Isolation Condenser steam leak occurred and was isolated.
- Isolation condenser area temperature is 170°F and is too high for personnel access.
- Valid Reactor Building isolations are present on each of the following parameters:
 - Drywell Pressure
 - Reactor Building Exhaust Radiation
 - Reactor Water Level

Restarting Reactor Building Ventilation would allow safer access to the Isolation Condenser area ...

- A. but is NOT allowed due to the Drywell Pressure isolation.
- B. but is NOT allowed due to the Reactor Building Exhaust Radiation isolation.
- C. but is NOT allowed due to the Reactor Water Level isolation.
- D. and may be performed after bypassing the isolation signals.

Answer:

B

Ref(s):

295L-S3

Question pedigree:

New

Explanation/Comments:

Only drywell pressure and RPV water level isolations are allowed to be bypassed since they do not indicate a release hazard. Reactor building exhaust radiation above the isolation setpoint would be indicative of a potential radioactive release problem and would NOT be allowed to be bypassed.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
98	SRO	1	2.00	295036	2.4.11	3.6	29501LP018

A plant operator reports that there is flooding in the U2 West LPCI/Core Spray Pump Room that is beyond the capacity of the sump pumps.

Which of the following describes the areas that may be affected if the source of the flooding could not be reduced?

- A. U2 HPCI and U3 West LPCI/Core Spray Pump Rooms
- B. U3 HPCI and U3 East LPCI/Core Spray Pump Rooms
- C. U2 HPCI and U2 East LPCI/Core Spray Pump Rooms
- D. U3 HPCI and U3 West LPCI/Core Spray Pump Rooms

Answer:

B

Ref(s):

DOA 0040-02 Rev 11

Question pedigree:

New

Explanation/Comments:

U2 West and U3 East LPCI/Core Spray Pump Rooms interconnect with both HPCI rooms. The only barriers are non-water tight doors. A high level condition in one room could affect the others. U2 East and U3 West LPCI/Core Spray Pump Rooms do not interconnect with the other areas.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
99	BOTH	1	3.75	295037	EK1.01	4.1* / 4.3*	29501LK031

An automatic scram occurred on Unit 3.

Control rods did not fully insert and reactor power decreased to 10%.

Containment parameters will require an emergency depressurization within fifteen minutes if trends are not changed.

Opening the bypass valves to rapidly reduce reactor pressure should ...

- A. be performed to allow for reduction of reactor power.
- B. be performed to anticipate an emergency depressurization.
- C. NOT be performed since the pressure reduction will add significant positive reactivity.
- D. NOT be performed since the pressure reduction will result in removal of boron from the RPV.

Answer:

Ref(s):

Question pedigree:

C

295L-S1

New

Explanation/Comments:

With the reactor still at power, the rapid depressurization will add significant positive reactivity to the core complicating the power actions underway. It is for this reason that an emergency depressurization is only performed if the conditions that require it are actually met.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
100	BOTH	2	2.00	295038	EA1.06	3.5 / 3.6	261L-S1-01

Unit 2 & 3 were at rated power with the following conditions:

- A SBTG train in PRIMARY.
- B SBTG train in STANDBY.

Which of the following describes the TOTAL expected SBTG flow following a reactor building ventilation isolation on Reactor Building Exhaust Radiation without operator action?

- A. ~ 3000 scfm
- B. ~ 4000 scfm
- C. ~ 6000 scfm
- D. ~ 8000 scfm

Answer:

B

Ref(s):

SDM 261000

Question pedigree:

New

Explanation/Comments:

The normal flow through the SBTG train is 4000 scfm.

On an initiation signal, the primary fan will start. The standby fan will wait 20 seconds and then start if the fan selected to PRIMARY has low flow or a heater off condition.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
101	RO	1	3.75	295038	EK2.01	3.1	272L-S2-05

A river discharge is currently in progress IAW DOP 2000-110.

A high radiation alarm on the River Discharge Radiation Monitoring System occurs.

Which of the following describes the expected system response?

- A. An isolation of the Equipment and Floor Drain systems is initiated.
- B. An automatic grab sample will be taken.
- C. Waste Surge Tank Pump trips automatically.
- D. An automatic isolation of the river discharge line is initiated.

Answer:

Ref(s):

Question pedigree:

B

DOP 2000-110

New

DAN 2223-6 A-12 Rev 2

Explanation/Comments:

A Grab sample will automatically be taken of Discharge Water flowing through the Radwaste Discharge Monitor sample loop.

The annunciator in the Radwaste Control Room not the Main Control Room. C.T. 2/3-1740-200 OR C.T. 2/3-1740-201 printer will type the number of counts when the alarm was initiated.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
102	SRO	2	2.50	500000	EA2.02	3.5	223L-S1-06

A small LOCA occurred on Unit 2 resulting in the following conditions:

- Drywell pressure was 3.5 psig.
- RPV level was +15 inches.

The NSO asked to obtain primary containment oxygen concentration.

He proceeded to the 923-5A panel and reported that concentration was 1.5%.

Which of the following describes why this IS/ IS NOT a valid report?

- A. This IS a valid report because this panel monitors the containment in post accident conditions.
- B. This IS NOT a valid report because this panel only monitors hydrogen in post accident conditions.
- C. This IS NOT a valid report because the containment atmospheric sampling system (CAS) isolates on a Group 2 signal.
- D. This IS NOT a valid report because the only way to get an oxygen concentration of the primary containment in a LOCA condition is from HRSS.

Answer:

C

Ref(s):

DAN 202(3)-5 E-5 Rev 17

Question pedigree:

LOC Exam Bank #2 22301B0131

Explanation/Comments:

The CAS sample valves automatically close on a Group II isolation. The CAM on 920-55(56) initiates and provides H₂ and O₂ indication.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
103	BOTH	1	2.93	500000	EK2.08	3.2 / 3.6	29502LK063

A LOCA has occurred on Unit 3 and the torus will be vented due to high drywell and torus hydrogen concentrations.

Venting from the torus is preferred because it (1) and is allowed only if torus water level is (2).

- | | (1) | (2) |
|----|--|-------------------|
| A. | provides for more controlled vent rate | less than 30 feet |
| B. | provides for more controlled vent rate | above 11 feet |
| C. | takes advantage of the scrubbing action of the water | less than 30 feet |
| D. | takes advantage of the scrubbing action of the water | above 11 feet |

Answer:

C

Ref(s):

295L-S10

Question pedigree:

New

Explanation/Comments:

Vent rate is controllable regardless of flow path. Venting from the torus takes advantage of the scrubbing action in suppression pool. Vent lines are covered if torus level is above 30 feet.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
104	SRO	2	2.50	295019	AA2.02	4.1	27800LP001

Given the following conditions:

- Unit 2 is at 100% power.
- All available Instrument Air Compressors are in operation.
- 2B Instrument Air Dryer Tower Blowdown valve becomes stuck in the open position.
- Unit 2 Instrument Air pressure is at 80 psig and dropping.

Based on these conditions you should direct operators to:

- A. IMMEDIATELY scram the reactor and close the outboard MSIVs
- B. verify that the Feedwater Reg Valves have transferred to the back-up nitrogen supply.
- C. adjust the RWCU Pressure Controller to account for the RWCU Flow Control valve drifting open.
- D. verify the Unit 2 Instrument Air to Unit 3 Instrument Air cross-tie has automatically opened..

Answer:

Ref(s):

Question pedigree:

B

DOA 4700-01

27800B0091

Explanation/Comments:

A manual scram and closure of the outboard MSIVs is not directed until air pressure drops to 55 psig. BOTH the RWCU controllers fail closed on a loss of Instrument air. The Unit 2 Instrument air to Unit 3 Instrument Air cross-tie does not open automatically. The Unit 2 IA to Unit 2 Service Air cross-tie does not automatically open.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
105	BOTH	1	3.50	600000	AK1.01	2.5 / 2.8	286L-S2-03

A report has been received of a electrical fire in the 2/3 DG Room.

The installed fire protection system has initiated.

The room must be entered to determine if fire is extinguished.

(1) What is the Fire Classification of the fire reported?

AND

(2) What safety hazards should be considered prior to operators entering the 2/3 DG Room?

- | | (1) | (2) |
|----|---------|--|
| A. | Class B | Electrical shock from water spray. |
| B. | Class C | Electrical shock from water spray. |
| C. | Class B | Suffocation from oxygen depletion due to the discharge of CO ₂ in the area. |
| D. | Class C | Suffocation from oxygen depletion due to the discharge of CO ₂ in the area. |

Answer:

D

Ref(s):

SDM 286002
NGET Rev 23

Question pedigree:

New

Explanation/Comments:

A Class C fire implies that the fire involves burning electrical equipment. The 2/3 DG Room has an installed CO₂ system.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
106	RO	1	3.67	294001	2.1.11	3.0	201L-S1-07

Unit 3 is operating at rated power.

The accumulator for control rod E-07 has been inoperable for 2 hours.

Control rod E-7 is at position 48.

903-5 G-2, ACCUMULATOR LVL HI/PRESS LO is received and the accumulator light is lit for control rod E-11 which is at position 48.

It is then reported that the accumulator pressure for control rod E-11 is 750 psig.

The action(s) required by technical specifications is (are) to . . .

- A. immediately place the reactor mode switch in the Shutdown position.
- B. declare control rods E-07 and E-11 inoperable. Immediately verify that at least one control rod drive pump is operating.
- C. declare control rods E-07 and E-11 inoperable. Verify within one hour that at least one control rod drive pump is operating.
- D. restore the accumulator for control rod E-07 to operable status within the next 6 hours or declare control rod E-07 inoperable

Answer:

Ref(s):

Question pedigree:

B

TS 3.3.G, action 1.c.

New

Explanation/Comments:

The accumulator for control rod E-11 is inoperable since the pressure is less than 940 psig. Both control rods must be declared inoperable and the operator must immediately verify that one control rod drive pump is operating by inserting at least one withdrawn control rod at least one notch.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
107	SRO	2	2.00	294001	2.1.12	4.0	299L022-01

Provide TS 3.6.B.

Unit 2 is operating at near rated power.

The NSO reports that indicated flow on two jet pumps differs from the established pattern by more than 10%.

All other recirculation parameters are normal.

Which of the following describe the action that must be taken?

- A. Be in at least HOT SHUTDOWN within 12 hours.
- B. Be in at least HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the next 24 hours.
- C. Restore flow indication for both of these jet pumps within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- D. Restore flow indication for at least one of these jet pumps within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.

Answer:

D

Ref(s):

TS 3.6.B

Question pedigree:

LOC Exam Bank #22 29901B0211

Explanation/Comments:

Both jet pumps are outside of their allowed range for the given core flow. Since there less than 2 of the conditions listed in T.S. 4.6.B.1 occurring (two out of three indications are SAT) T.S. 3.6.B. Action 1 does NOT apply. T.S. 4.6.B. Action 2 does apply Restore flow indication for at least one of these jet pumps within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
108	SRO	1	5.00	294001	2.1.14	3.3	29900LK152

Which of the following requires notification of the Site Vice President?

- A. The Load Dispatcher directs a load reduction of 100 MWe on Unit 3 due to changes in system demand.
- B. An unexpected 1/2 scram occurs on Unit 2 due to an LPRM spike.
- C. An Operator cuts his finger requiring on site medical attention and filing of an accident report.
- D. A scheduled routine surveillance is deferred due to lack of IMD resources.

Answer:

Ref(s):

Question pedigree:

B

OP-AA-101-501 Rev 1

New

Explanation/Comments:

For an unexpected half scram, OP-AA-101-501 requires the Site VP be notified.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
109	BOTH	1	1.75	294001	2.1.2	3.0 / 4.0	29800LK059

The Unit 2 NSO is about to start 2A Reactor Feed Pump as part of a unit startup.

In accordance with Operations Standards he should ...

- A. Start the pump. No announcement is needed since it is part of a planned evolution.
- B. Announce the pump start prior to operating the control switch ONLY if an expected alarm will occur.
- C. Announce the pump start and receive a confirmatory repeatback from the Unit Supervisor AFTER operating the control switch.
- D. Announce the pump start and receive a confirmatory repeatback from the Unit Supervisor PRIOR to operating the control switch.

Answer:

D

Ref(s):

AD-AA-104-102 Rev 3

Question pedigree:

ILT Exam Bank #29801S0051

Explanation/Comments:

Per reference.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
110	RO	1	2.75	294001	2.1.8	3.8	20200LP008

Unit 2 is shutdown.

Local adjustment of Reactor Recirculation pump 2A speed is required.

Which of the following describes the MINIMUM requirements to perform this evolution?

- A. Communication with any qualified Operator prior to adjustment.
- B. Communication between the Control Room and any qualified Operator at the motor generator.
- C. Communication with an active licensed operator with no license restriction which would prohibit solo operations prior to adjustment.
- D. Communication between the Control Room and an active licensed Operator at the motor generator with no license restriction which would prohibit solo operations at the motor generator.

Answer:

Ref(s):

Question pedigree:

B

DOP 0202-12 Rev 15

New

Explanation/Comments:

In order to perform Recirc MG Scoop Tube Manual Local Operation, communications must be established between the Control Room AND the operator at the applicable recirc MG set.

With the unit in Shutdown or Refuel Mode of operation, local scoop tube operation may be performed by a qualified Operator.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
111	SRO	1	2.50	294001	2.2.14	3.0	29900LP011

Which of the following qualify as a "Temporary Modification" as defined in CC-AA-112, Temporary Modifications?

- A. A circuit card is pulled to disable an annunciator.
- B. A hose installed to drain a heat exchanger under an outage.
- C. An electrical lead is lifted to perform a surveillance procedure which is to be completed by the end of shift.
- D. Installation of an electrical jumper for testing under an approved work procedure which is to be completed within 24 hours.

Answer:

A

Ref(s):

CC-AA-112

Question pedigree:

ILT Exam Bank 29902S0641

Explanation/Comments:

Q_ID	Exam	Cog Level	Difficulty	Sigh	KA	Imp	Objective
112	BOTH	1	2.63	294001	2.2.2	4.0 / 3.5	215L002-02

While performing a reactor startup, the IRMs should be ranged up when indicating between:

- A. 5/125 and 15/125 of full scale.
- B. 25/125 and 50/125 of full scale.
- C. 25/125 and 75/125 of full scale.
- D. 50/125 and 100/125 of full scale.

Answer:

C

Ref(s):

DOP 0700-02

Question pedigree:

ILT Exam Bank #21503B0021

Explanation/Comments:

When IRMs are indicating 25/125 (8/40) and 75/125 (24/40) of full scale.

Q_ID	Exam	Cog Level	Difficulty	Sigh	KA	Imp	Objective
113	BOTH	2	3.57	294001	2.2.24	2.6 / 3.8	263L-S3-07

Provide copy of TS 3.9.C.

Unit 2 has been shutdown for 10 days and coolant temperature is 190°F.

Unit 3 is at rated power.

Battery testing has determined that the 250 Vdc Unit 2 battery must be replaced.

The battery has been out of service for testing 5 days this cycle.

What Technical Specification actions are required for Unit 3?

- A. None if the Unit 3 battery is aligned to Unit 3.
- B. Restore the Unit 2 battery to operable status within 2 days, or be in HOT SHUTDOWN within 12 hours.
- C. Restore the Unit 2 battery to operable status within 7 days, or be in HOT SHUTDOWN within 12 hours.
- D. Restore the Unit 2 battery to operable status within 9 days, or be in HOT SHUTDOWN within 12 hours.

Answer:

D

Ref(s):

TS 3.9.C.

Question pedigree:

New

Explanation/Comments:

Since the battery was out of service for 5 days already, the battery may be inoperable for an additional nine days during the current cycle as long as it is determined that a 250 volt battery needed to be replaced (Note b)

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
114	SRO	1	3.50	294001	2.2.25	3.7	299L-S1-04

The purpose of the safety limit that requires reactor pressure vessel water level to be at least 12 inches above the top of active irradiated fuel during shutdown conditions is to ...

- A. provide radiation shielding.
- B. provide decay heat removal capability.
- C. ensure that the NPSH requirements to the recirculation pumps are met.
- D. ensure that the NPSH requirements to the shutdown cooling pumps are met.

Answer:

Ref(s):

Question pedigree:

B

TSB 2.1.D.

ILT EB #299900S0101

Explanation/Comments:

With fuel in the reactor vessel during periods when the reactor is shutdown, consideration must also be given to water level requirements due to the effect of decay heat. If reactor water level should drop below the top of the active irradiated fuel during this period, the ability to remove decay heat is reduced.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
115	RO	1	4.50	294001	2.2.33	2.5	29800LK055

The Banked Position Withdrawal Sequence (BPWS) applies from (1) control rod density to (2) power.

- | | (1) | (2) |
|----|-------|------|
| A. | 0 % | 20 % |
| B. | 0 % | 30 % |
| C. | 100 % | 20 % |
| D. | 100 % | 30 % |

Answer:

C

Ref(s):

299L-S3

Question pedigree:

New

Explanation/Comments:

BPWS applies from 100% control rod density (all rods in) to 20% power.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
116	BOTH	2	3.00	294001	2.3.1	2.6 / 3.0	NGET

The RWCU pump room was recently surveyed and the following conditions exist:

- General area radiation of 120 mrem per hour.
- Smearable contamination of 100 dpm/100 cm² (beta-gamma)

Which of the following postings should be applied to this area?

- A. Radiation Area
- B. High Radiation Area
- C. Locked High Radiation Area
- D. Contamination Area

Answer:

B

Ref(s):

DRP 5010-01, Rev. 09

Question pedigree:

ILT Exam Bank #29400S0261

(modified)

Explanation/Comments:

A High Radiation Area is any area within an RPA accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a deep dose equivalent in excess of 100 mrem/hr at 30 centimeters from the radiation source or from any surface that the radiation penetrates.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
117	BOTH	2	2.63	294001	2.3.2	2.5 / 2.9	29900LK045

An Operator has a tagout that requires second or independent verification.

For which of the following conditions can the Shift Manager waive independent verification?

- A. An OOS card to be hung on a drain valve on the #2 Main Turbine Stop Valve at rated power.
- B. An OOS card to be hung on the south instrument air cross-connect valve 8 feet off the floor in the turbine building 517 level.
- C. A Temporary Modification on the 2/3 Diesel Air Start header.
- D. A Temporary Modification on the 2/3A SGBT Charcoal Filter.

Answer:

Ref(s):

Question pedigree:

A

AD-AA-104-103 Rev 2

New

Explanation/Comments:

The Shift Manager may WAIVE verification requirements when verification may incur radiation exposure in excess of 5 mRem ...

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
118	SRO	1	3.50	294001	2.3.3	2.9	290L-S1-03

Unit 2 is currently operating at rated power.

The NLO reports from the field that a loss of domestic water has occurred.

As the Unit Supervisor you must declare the . . .

- A. Control Room HVAC inoperable.
- B. Control Room Fire Protection system inoperable.
- C. Unit 2 Service Water Radiation Monitor inoperable.
- D. Unit 2 and Unit 3 Service Water Radiation Monitors inoperable.

Answer:

Ref(s):

Question pedigree:

C

DOA 4200-01 Rev 3

New

Explanation/Comments:

Unit 2 / Unit 3 difference question. Domestic water supplies drive water for Unit 2 Service Water Radiation Monitor.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
119	SRO	1	3.88	294001	2.3.6	3.1	272L-S2-01

DOP 2000-110, Attachment 1: Waste Surge Tank Radioactive Waste Discharge to River Card, contains the calculations for determining the (1) flowrate and radiation monitor alarm setpoints, and must be verified by the (2).

- | | (1) | (2) |
|----|-----------|---------------------------|
| A. | discharge | Radwaste Supervisor |
| B. | discharge | Shift Manager or designee |
| C. | dilution | Radwaste Supervisor |
| D. | dilution | Shift Manager or designee |

Answer:

B

Ref(s):

268N-03
DOP 2000-110 Rev 19

Question pedigree:

New

Explanation/Comments:

Tests SRO familiarity with Radioactive Discharge procedure.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
120	RO	1	2.50	294001	2.3.9	2.5	22301LP002

In order to purge the containment to the Reactor Building Ventilation system, sample results for which of the following must be below prescribed limits?

- A. Iodine 131 and Beta/Gamma (total particulate)
- B. Iodine 131 and Alpha (total particulate)
- C. Nitrogen 16 and Beta/Gamma (total particulate)
- D. Nitrogen 16 and Alpha (total particulate)

Answer:

A

Ref(s):

DOP 1600-07 Rev 15

Question pedigree:

New

Explanation/Comments:

Per Limitations and Actions: Iodine 131 and Beta/Gamma (total particulate) sample results must be below the specified release rate limits.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
121	BOTH	1	3.00	294001	2.4.13	3.3 / 3.9	29501LK011

While performing DOA 600-01, Transient Level Control, an entry condition into the Emergency Operation Procedures (EOPs) is met.

Which of the following describes the abnormal procedure use for this condition?

Enter all applicable EOPs and execute ...

- A. all flow paths concurrently for the EOPs entered. The abnormal procedures are exited when the EOPs are entered.
- B. all flow paths concurrently for the EOPs entered. Execute the remaining steps of the abnormal procedures when the plant is stable.
- C. the flow path for the most degraded plant parameter first. The abnormal procedures are exited when the EOPs are entered.
- D. the flow path for the most degraded plant parameter first. Execute the other flow paths and the remaining steps of the abnormal procedures when the plant is stable.

Answer:

B

Ref(s):

295L-02

Question pedigree:

New

Explanation/Comments:

When EOPs are entered, all paths are pursued simultaneously. Abnormal procedures are not exited just because EOPs are entered.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
122	SRO	1	2.50	294001	2.4.32	3.5	29501LP059

Unit 2 was at rated conditions when ANNUN DC PWR FAILURE alarms are received on several panels simultaneously.

A bell inside Panel 902-4 sounds.

Which of the following describes the expected operator actions?

- A. Scram the reactor due to the loss of all annunciators. The Shift Manager should evaluate for a possible GSEP condition.
- B. Verify that the normal AC power supply is still available by performing an annunciator check on each affected panel. Notification of the Shift Manager IS NOT required.
- C. Verify that the normal AC power supply is still available by performing an annunciator check on each affected panel. Notification of the Shift Manager IS required.
- D. Determine the cause of the loss of all annunciators. The Shift Manager should evaluate for a possible GSEP condition.

Answer:

D

Ref(s):

DAN 902(3)-5 H-3 Rev 5

Question pedigree:

New

Explanation/Comments:

Receipt of these alarms indicate a failure of the panels Annunciator System. Operators should determine the cause of the loss of annunciators and attempt to restore. The Shift Manager should evaluate for a possible GSEP condition (EPIP 200-T1 MU6)

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
123	RO	2	2.25	294001	2.4.49	4.0	24501LP011

Unit 2 was in startup with reactor power at 30%.

The NSO manually tripped the turbine and noticed turbine speed was NOT decreasing and the Turbine Stop valves were still OPEN.

What operator actions must be performed?

- A. Trip the main generator and close the MSIVs.
- B. Trip the main generator and open the bypass valves.
- C. Scram the reactor and close the MSIVs.
- D. Scram the reactor and open the bypass valves.

Answer:

C

Ref(s):

DOA 5600-01, Rev. 14

Question pedigree:

LOC Exam Bank #2 29501B0191

Explanation/Comments:

If Stop Valves remain open after depressing the turbine trip pushbutton the operator is directed to scram the reactor and close the MSIVs.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
124	BOTH	2	2.75	294001	2.4.50	3.3 / 3.3	20102LK033

A reactor startup is in progress on Unit 3.

Reactor power is increasing and IRMs are on range 5.

All SRMs are partially inserted.

Annunciator 903-5 A-4, SRM HI/TNOP, was received.

The SRMs are reading as follows:

SRM 21	2×10^3 cps	SRM 22	2×10^2 cps
SRM 23	2×10^5 cps	SRM 24	2×10^4 cps

Which of the following is required to continue the plant startup?

- A. Select and withdraw all SRMs until fully withdrawn.
- B. Select and insert SRM 22 until counts are greater than 10^3 cps.
- C. Continue rod withdrawal since all IRMs are above range 3.
- D. Select and withdraw SRM 23 until counts are less than 8×10^4 .

Answer:

Ref(s):

Question pedigree:

D

DAN 902(3)-5 A-4, Rev. 05

New

SDM 215004

Explanation/Comments:

To continue rod withdrawal with IRMs below range 8, SRM 23 must be withdrawn until SRM counts are below the high setpoint (0.885×10^5) per DAN 902(3)-5 A-4.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
125	RO	2	2.75	294001	2.4.9	3.3	15LC004.1.b

During a normal refueling outage the following conditions exist on U2:

- Fuel is in the reactor vessel
- Fuel pool gates are installed.
- 2A and 2B LPCI pumps are Protected Pathway Components.
- The following systems are OOS with major outage work in progress:
 - SBLC (pumps)
 - Feedwater (piping)
 - Both CS pumps
 - 2C and 2D LPCI pumps

The following events occur during your shift:

- 2A and 2B LPCI pumps are declared inoperable per Tech. Specs. but are available for S/D risk.
- Refuel level indication begins to drop rapidly.
- Verbal reports of dropping fuel pool level and drywell flooding are called into the control room.

Which of the following sources of makeup water should the control room team use to maintain RPV level?

- A. Fire system
- B. 2A and 2B LPCI pumps
- C. Standby Coolant Supply
- D. Clean Demin hoses from the refuel floor.

Answer:

B

Ref(s):

OU-AA-103
Dresden Ops Dept. Policy #35 5/31/95

Question pedigree:

LOC EB 29900B1091

Explanation/Comments:

Although the pumps are inoperable per Tech Specs, they still have a high probability of functioning to maintain the core covered.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
126	SRO	1	3.75	294001	2.1.11	3.8	223L-S4-07

While performing a power increase on Unit 2 to rated conditions, the NSO reports that reactor pressure is 1015 psig.

Which of the following describes the required action based on the NSO's report?

Reactor pressure must be reduced to less than ...

- A. 1005 psig within the next 15 minutes.
- B. 1005 psig within the next hour.
- C. 1015 psig within the next 15 minutes.
- D. 1015 psig within the next hour.

Answer:

A

Ref(s):

TS 3.6.L.

Question pedigree:

New

Explanation/Comments:

With reactor pressure >1005 psig, reduce the pressure to ≤1005 psig within 15 minutes or be in at least HOT SHUTDOWN within 12 hours.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
127	SRO	2	4.13	294001	2.3.9	3.4	29502LK068

Provide DEOP 500-4

The drywell is being vented to control H₂ and O₂.

The following values were noted prior to initiating venting:

	Drywell	Torus
Hydrogen	7%	3%
Oxygen	7%	4%

After some period of time, it is decided that drywell hydrogen and oxygen cannot be controlled with SBGT and Nitrogen Purge.

In this condition, which of the following is the proper response?

- A. Immediately spray the torus.
- B. Begin simultaneous venting of the torus AND drywell.
- C. Vent through reactor building ventilation, AND purge with air.
- D. Use APCV in conjunction with the present lineup until either H₂ or O₂ is below the deflagration limit.

Answer:

C

Ref(s):

DEOP 200-2

DEOP 500-4

Question pedigree:

LOC Exam Bank #05500B0402

Explanation/Comments:

Only Attachment 4 addresses venting the drywell through the reactor building ventilation system. The only time this is authorized for use is if "drywell hydrogen and oxygen cannot be controlled using SBGT and Nitrogen purge", then purge with air using the reactor building. With the concentrations given, torus sprays are not authorized. Simultaneous venting of the drywell and torus is never done. When use of the APCV is directed then venting from other locations is always secured, so augmenting with the APCV in conjunction with the current lineup is not correct.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
128	SRO	2	3.25	294001	2.4.49	4.0	21200LK004

Unit 3 is operating at rated power with an IMD surveillance on the RPS in progress.

The NSO noticed the following:

- Scram solenoid group indicating lights A1, A2, B1, B2, B3, and B4 extinguish.
- Scram solenoid group indicating lights A3, and A4 remain lit.

The NSO is required to . . .

- A. depress the MANUAL SCRAM CH A pushbutton and place the Reactor Mode Switch in SHUTDOWN.
- B. depress both MANUAL SCRAM CH A and MANUAL SCRAM CH B pushbuttons and place the Reactor Mode Switch in SHUTDOWN.
- C. depress the MANUAL SCRAM CH A pushbutton and initiate ARI.
- D. depress the MANUAL SCRAM CH A and MANUAL SCRAM CH B pushbuttons and initiate ARI.

Answer:

Ref(s):

Question pedigree:

B

DOA 0500-02, Rev 01

New

Explanation/Comments:

IF a Partial Full Scram occurred, THEN depress both MANUAL SCRAM CH A and MANUAL SCRAM CH B pushbuttons AND place the Reactor Mode Switch in SHUTDOWN.

Dresden Nuclear Station

ES-401

Written Examination
Review Worksheet

Form ES-401-9

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q# K/A	SRO Only			
1*	H	3											✓	B	S	bank
2*	H	2											✓	B	S	bank
3*	H	3											✓	B	S	new
4*	F	2											✓	B	S	new
5*	H	2											✓	B	S	new
6*	F	2						✓					✓	R	US	new - from memory? Ops requires from memory
7*	H	3											✓	B	S	mod
8*	H	3											✓	B	E	new - "received" appears twice - Grammar fixed.
9*	H	3											✓	R	S	new
10*	H	2											✓	B	S	new

Instructions

[Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts.]

- Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.
- Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).
- Check the appropriate box if a psychometric flaw is identified:
 - The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
 - The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).
 - The answer choices are a collection of unrelated true/false statements.
 - More than one distractor is not credible.
 - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).
- Check the appropriate box if a job content error is identified:
 - The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).
 - The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).
 - The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).
 - The question requires reverse logic or application compared to the job requirements.
- Check the appropriate box if the sampled question does not match the approved K/A or an SRO-only question is not at the SRO level.
- Based on the reviewer's judgment, is the question as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?
- For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.

* selected for initial review

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q# K/A	SRO Only		
11*	F	2										✓	B	S	new
12*	H	2										no	B	U	new - k/a does not fit, consider putting in past tense. <i>k/a deleted (n/a Dresden) new k/a & question submitted. replacement was acceptable.</i>
13*	H	4						✓				✓	R	US	modified - requires RO to look up a provided tech spec. <i>Dresden expects their ROs to look up tech specs. not a direct look-up</i>
14*	H	2										✓	S	S	bank
15*	H	3										✓	B	S	new
16*	F	2										✓	B	S	new
17*	H	2										✓	B	E	new - verb tense: "were" to "was" <i>change made</i>
18*	F	3										✓	R	E	new - delete training in stem, add "during TIP operation" <i>changes made</i>
19*	FH	2										✓	R	US	new - facility says "higher," consider using "shear valve closure" to get rid of 1 out of 2 taken twice. <i>More than one item used - higher, can't get rid of 1 out of 2 taken twice.</i>
20*	H	2										✓	B	S	new
21*	H	3										✓	B	S	bank
22*	H	3										✓	S	E	new - consider aligning col (2) to left <i>reformatted</i>
23*	F	2										no	B	U	new - k/a does not fit <i>question was replaced</i>
24*	H	3										✓	R	E	new - add word "is" to stem <i>grammar fixed</i>
25*	H	2										✓	R	S	new
26*	F	3										✓	B	S	bank
27*	H	2										✓	B	S	new
28*	H	2										✓	B	S	new
29*	H	3										✓	R	E	new - fix grammar error, address stable reactor pressure - <i>fixed</i>
30*	H	3										✓	S	S	mod

* selected for initial review

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q# K/A	SRO Only		
31	F	3										✓	B	S	mod
32	F	2										✓	S	S	new
33	H	2										no	B	U	new - k/a doesn't match <i>question was replaced</i>
34	H	2										✓	B	S	new
35	F	2										✓	B	S	new
36	H	3										✓	R	S	new
37	F	2										✓	B	S	new
38	H	2										✓	B	S	new
39	H	2										✓	R	S	new
40	H	2										✓	B	S	new
41	H	2										✓	B	S	new
42	F	2										✓	R	S	bank
43	H	3										✓	R	S	new
44	F	2										✓	B	S	new
45	H	2										✓	B	S	mod
46	H	2										✓	R	S	new
47	H	2										✓	B	S	bank
48	H	2										✓	B	S	new
49	F	2										✓	S	US	new not SRO ONLY - <i>requires understanding of 250v system basis which is SRO task. question is SRO only</i>
50	H	3										✓	S	S	new

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q# K/A	SRO Only		
51	F	2										✓	B	U	bank - facility says "higher" - facility agrees "fundamental"
52	F	2										✓	B	S	new
53	H	2										✓	S	E	bank - change 1 distractor to "operable" - declined to make enhancement. they did not see the need to make the change
54	H	2										✓	B	S	new
55	F	2										no	R	U	new - overlaps w/ Q100 - station removed 3 rd column containing overlap
56	H	2										✓	R	S	new
57	F	2										✓	R	S	new
58	F	2										✓	B	S	new
59	F	2										✓	B	S	bank
60	H	2										✓	B	S	bank
61	H	2										✓	B	S	new
62	H	3										✓	S	US	new - not SRO ONLY - diagnostic required for SRO, even though RO may be able to answer the question
63	F	2										✓	B	S	mod
64	H	3										✓	R	S	new
65	H	3										✓	B	S	new
66	H	2										✓	B	S	new
67	H	2										✓	B	U	new - facility says "lower" - station agrees "higher"
68	F	2										✓	B	S	new
69	H	2										✓	S	S	new
70	H	2										✓	S	U	new - not SRO ONLY - station thinks SRO ONLY, but replaced question

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q# K/A	SRO Only		
71	H	2										✓	B	S	new
72	H	2										✓	B	S	new
73	F	2										✓	R	S	new
74	F	2										✓	B	S	new
75	F	2										✓	B	S	bank
76	H	2										✓	S	S	new
77	H	2										✓	B	S	new
78	F	3										✓	R	S	bank
79	F	3										✓	R	S	bank
80	H	3										✓	B	S	new
81	H	3										✓	B	S	bank
82	F	2										✓	B	S	new
83	H	3										✓	S	S	new
84	F	2										✓	B	E	new - make change to prevent 2 correct answers - <i>facility agreed</i>
85	H	2										✓	B	S	new
86	F	2										✓	B	S	bank
87	F	2										✓	S	U	bank - facility says "higher" direct lookup w/ deops provided - <i>station agreed, "fundamental"</i>
88	H	3										✓	B	E	new - add condition "the reactor successfully scrammed" - <i>condition added</i>
89	F	3										✓	B	S	new
90	H	2										✓	B	S	new

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Min-utia	#/units	Back-ward	Q# K/A	SRO Only		
91	H	2										✓	B	S	new
92	H	3										✓	S	E	mod
93	F	2										✓	B	S	new
94	F	2										✓	S	S	new
95	H	2										✓	B	S	new
96	H	3										✓	S	S	bank
97	HF	3										✓	B	US	new - facility says "lower" - facility trains on this, "fundamental"
98	F	2										✓	S	S	new
99	F	2										✓	B	US	new - incorrect answer - answer is correct as written
100	FH	2										✓	B	US	new - facility says "higher" - analysis required, higher is correct
101	F	2										✓	R	S	new
102	H	2										✓	S	E	bank - add "was" after "the NSO..." - grammar corrected
103	F	3										✓	B	S	new
104	H	3										✓	S	U	bank - not SRO ONLY - station agrees, replaced the Q
105	F	2										✓	B	S	new
106	H	2										✓	R	U	new - facility says "lower;" - RO job? - Replaced with a cognitive level 1 question that is RO.
107	H	3										✓	S	U	bank - direct lookup - replaced question with a previously used NRC Q that was an SRO ONLY
108	F	2										✓	S	S	new
109	F	2										✓	B	S	bank
110	F	2										✓	R	S	new - may need to change "qualified" to "licensed" - mod not required

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
6	RO	1	2.50	203000	2.2.12	3.0	20300LK003

LPCI System Quarterly Flow Rate Test (DOS 1500-05) operates...

- A. pumps individually to ensure each pump will pass the required flow.
- B. two pumps at a time in a single division to ensure each division will pass the required flow.
- C. pumps in combinations of three to ensure the system will pass the required flow.
- D. all four pumps simultaneously to ensure the system will pass the required flow.

Answer:

Ref(s):

Question pedigree:

C

DOS-1500-05, Rev. 29

New

Explanation/Comments:

The acceptance criteria for the test verifies LPCI pumps, operated in combinations of three, can pass 14,500 gpm.

from memory?

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
8	BOTH	2	2.50	204000	A2.08	2.9 / 3.1	204L-S1-05

A startup is in progress on Unit 3 with the following conditions:

- plant heatup in progress.
- reactor pressure is 50 psig.
- reactor coolant temperature is 270°F.

The RWCU Auxiliary Pump seal overheats and one of the alarms received is 903-4 H-12, RWCU AUX PP CLG WTR TEMP HI, is received.

The Rx Outlet Isol, MO 3-1201-1 and Rx Inlet Isol, MO 3-1201-2 close.

Which of the following describes the expected operator action?

Verify the RWCU Aux Pump is _____ and AUX PP SUCTION, MO 3-1201-3, and RX OUTLET BYP, MO 3-1201-1A, valves are _____.

- A. RUNNING OPEN
- B. TRIPPED OPEN
- C. RUNNING CLOSED
- D. TRIPPED CLOSED

Answer:

Ref(s):

Question pedigree:

D

DAN 902(3)-4 H-12, Rev. 04

New

Explanation/Comments:

Receipt of the RWCU AUX PP CLG WTR TEMP HI alarm indicates that cooling water exiting the Auxiliary Pump cooler is greater than 140°F. This condition results in an automatic closing of the RWCU system 1, 1A, 2, and 3 valves, and a trip of the Auxiliary Pump. The first operator action of DAN 902(3)-4 H-12 is to verify normal RBCCW flow to the Auxiliary Pump cooler.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
12	BOTH	2	2.31	207000	K4.08	3.4 / 3.6	207L-S1-05

WAS

doesn't match

Following a reactor scram, Unit 2 reactor pressure is being maintained between 800 and 1000 psig using the Isolation Condenser.

The Outboard Condensate Return Valve (2-1301-3) is being throttled after taking the HAND/RESET switch to the HAND position.

WAS

If reactor pressure suddenly increased to 1100 psig for 16 seconds, the 2-1301-3 valve would...

- A. Fully open since another initiation signal has been received.
- B. Remain as is since the Hand/Reset Switch was taken to the HAND position.
- C. Remain as is since the initiation signal was reset.
- D. Throttle to the mid-position since another initiation signal has been received.

Answer:

Ref(s):

Question pedigree:

A

SDM 207000

New

Explanation/Comments:

Initiation signal generated with Reactor pressure greater than or equal to 1070 psig for 15 seconds. Once reset, the Isolation Condenser will initiate upon receiving a new initiation signal. On initiation the 2-1301-3 Outboard Condensate Return Valve will fully open unless in Pull-To-Lock.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
13	RO	2	4.14	209001	2.1.10	2.7	209L-S1-07a

Given the following plant conditions:

- Unit 2:
 - In "REFUEL" with core alterations in progress.
 - CRD mechanism removal is in progress. (This activity has the potential to drain the vessel.)
 - Torus is empty.
 - Both Core Spray pumps aligned to the 2/3A CST.
 - Both LPCI loops are drained.
- Unit 3 was shutdown.
- 1 CST indicated level 30,000 gallons of water.
- 2/3A CST indicated level 250,000 gallons of water.
- 2/3B CST drained.

An Instrument Technician informs the Unit 2 NSO that the 2/3A CST level indicator is reading high. The correct level in the tank corresponds to 100,000 gallons of water.

Based on this information...

- A. Both core alterations and CRD mechanism removal work may continue.
- B. Core alterations must be stopped but CRD mechanism removal may continue.
- C. CRD mechanism removal must be stopped but core alterations may continue.
- D. Both core alterations and CRD mechanism removal work must be stopped.

Answer:

D

Ref(s):

TS 3.5.B

Question pedigree:

20901B0081 (modified)

Explanation/Comments:

Minimum water available from CST is 140,000 gallons. With less than required, you must suspend all core alterations and operations with the potential for draining the vessel.

T.S. Direct look-up for RO?

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
17	BOTH	2	3.00	214000	K6.02	2.7 / 2.7	201L-S2-03

Control Rod F-09 is uncoupled.

The overtravel reed switch on control rod F-09's position probe is stuck open.

Which of the following describes the expected indication on the MCR display if control rod F-09 ^{WAS} withdrawn to position 48 and a coupling check then performed?

The position readout for Control Rod F-09 on the Full Core Display will . . .

- A. be blank and an OVERTRAVEL alarm will be received.
- B. indicate a Red "48" and an OVERTRAVEL alarm will be received.
- C. be blank and an OVERTRAVEL alarm will NOT be received.
- D. indicate a Red "48" and an OVERTRAVEL alarm will NOT be received.

Answer:

C

Ref(s):

SDM 201002

Question pedigree:

New

Explanation/Comments:

With the control rod uncoupled, the mechanism will settle to the overtravel position (146 inches from full-in). With the overtravel reed switch stuck open, no alarm will be generated. There is no indication on the MCR display when a control rod is in the overtravel beyond full-out position.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
18	RO	1	2.50	215001	A1.06	2.9	215L-S1-12

~~The U-2 TIP Cubicle ARM station reading increases during normal TIP operation.~~

Which of the following events would prevent the U-2 TIP Cubicle ARM station from returning to a normal value?

- A. Inserting two detectors both selected for the common channel.
- B. Activation of the cable shear valve during a TIP trace.
- C. Failure of the TIP detector proximity switch during withdrawal.
- D. Selecting another channel when a TIP detector is in the indexer.

during TIP operation

Answer:

Ref(s):

Question pedigree:

C.

SDM 215001

New

Explanation/Comments:

The proximity switch would normally stop the withdrawal with the TIP detector in the shield chamber. Since the proximity switch has failed, the detector would be withdrawn past the shield chamber and then be stopped by Drive Control Unit when the Veeder Root Counter sees a value below that identified on the "Reverse Safety Stop" label. This will leave the probe past the shield chamber, but still inside the TIP room.

Activation of the cable shear valve would not increase the radiation level in the TIP cubicle.

The detectors are interlocked to allow only one detector aligned to the common location.

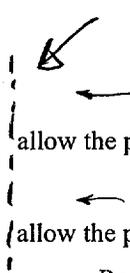
The indexer is in the drywell and is prevented from moving if a detector is in the movable tube.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
22	SRO	2	4.00	215003	2.1.7	4.4	20102LK005

A reactor startup is in progress and the following conditions exist . . .

- Power has risen from 10/40 on IRM range 3 to 40/125 on IRM range 4 in 40 seconds.
- NO rod motion is in progress.

Based on the above conditions, the reactor period is about (1) and the Unit Supervisor should direct the NSO to (2).

- | | | | |
|----|------------|---|--|
| | (1) | | (2) |
| A. | 29 seconds |  | ← insert control rods to obtain a longer reactor period. |
| B. | 29 seconds | | allow the power increase to continue since the reactor period is reasonable. |
| C. | 58 seconds | | ← insert control rods to obtain a longer reactor period. |
| D. | 58 seconds | | allow the power increase to continue since the reactor period is reasonable. |

Answer:

A

Ref(s):

DGP 01-01 Rev 90

Question pedigree:

New

Explanation/Comments:

Reactor period (P) = doubling time (DT) X 1.44

Power doubled twice; 10/40 – 10./125: 10 to 20 and 20 to 40 in 40 seconds.

The doubling time would then be 40 sec/2.

Therefore P = (40 sec/2) x 1.44 = 20 sec. x 1.44. Period = 28.8 sec.

With a reactor period of less than 60 seconds, control rods should be inserted until a reasonable period is achieved (60 seconds to 300 seconds.)

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
23	BOTH	1	1.80	215003	K4.05	2.9 / 3.0	215L-S3-03

doesn't fit

Which of the following methods is utilized to increase Intermediate Range Monitor (IRM) detector life?
During power operations, the . . .

- A. potential across the detector is reduced by removing the high voltage power supply.
- B. potential across the detector is reduced by maintaining the range switches below range 7.
- C. flux reaching the detector is reduced by withdrawing the detector into an in-core shield.
- D. flux reaching the detector is reduced by withdrawing the detector from the reactor core.

Answer:

Ref(s):

Question pedigree:

D

SDM 215003

New

Explanation/Comments:

Removing them from the core as soon as they are no longer needed reduces exposure to the IRM detectors and increases their lifetime.

Replaced

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
24	RO	2	3.43	215004	K6.05	2.6	215L-S4-09

A reactor startup ⁵⁻¹⁵ in progress on Unit 2.

The IRM detector range switches are aligned as follows:

- IRM channels 15 and 16 are on range 2.
- All other IRM channels are on range 3.

SRM 21 indication decreases to 2 cps due to a failure of an amplifier in the trip unit.

As a result of this failure . . .

- ROD OUT BLOCK and SRM HI/INOP alarms are received.
- only a SRM HI/INOP alarm is received.
- only a SRM DOWNSCALE alarm is received.
- ROD OUT BLOCK and SRM SHORT PERIOD alarms are received.

Answer:

Ref(s):

Question pedigree:

C

SDM 215004

New

Explanation/Comments:

SRMs 21 and 22 are associated with IRMs 11, 12, 13, and 14.

The retract permit does not give a control rod block since the associated IRMs are all on range 3.

The SRM DOWNSCALE alarm would be activated since the output was less than 3 cps.

SRM HI/INOP would come in on a downscale failure of the High Voltage power supply not the Trip circuit.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
29	RO	2	3.36	219000	A2.12	3.0	203L-S1-05

Unit 3 was at rated conditions with Division 1 LPCI loop was running in torus cooling for a HPCI surveillance. A large-break LOCA occurred on the 'B' recirculation loop.

- RPV water level is - 140 inches and decreasing.
- RPV pressure is 300 psig and (stable) ... *is it a large-break LOCA?*

The NSO observes valves TORUS CLG/TEST MO 3-1501-38A and TORUS CLG/TEST MO 3-1501-20A full open.

Which of the following describes the consequences of the NSO's observation AND the action that the NSO should perform as a result?

- A. INJ VLV MO 3-1501-22A should be closed and there will be no injection flow. The NSO should close 3-1501-38A and 3-1501-20A and open 3-1501-22A.
- B. LPCI VLV MO 3-1501-21A should be open but injection flow will be low. The NSO should close 3-1501-38A and 3-1501-20A.
- C. INJ VLV MO 3-1501-22A should be closed and there will be no injection flow. The NSO should ensure 3-1501-38A and 3-1501-20A remain open by turning the Containment Spray/Torus Cooling Permissive switch to MANUAL.
- D. LPCI VLV MO 3-1501-21A should be open but injection flow will be low. The NSO should close 3-1501-21A and ensure 3-1501-38A and 3-1501-20A remain open by turning the Containment Spray/Torus Cooling Permissive switch to MANUAL.

Answer:

B

Ref(s):

SDM 203000

Question pedigree:

New

Explanation/Comments:

INJ VLV MO 3-1501-22A and LPCI VLV MO 3-1501-21A open with an initiation signal present and RPV pressure less than 350 psig.

With TORUS CLG/TEST MO 3-1501-38A and TORUS CLG/TEST MO 3-1501-20A failed full open, injection flow would be greatly reduced.

See as-used question for fixes

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
33	BOTH	2	3.00	223002	A2.08	2.7 / 3.1	272L-S2-05

doesn't match

Provide copy of DOD 7500-02.

DOS 7500-02, SBTG Surveillance and IST Test, was in progress for post maintenance operability testing of SBTG train 2/3 A.

SBTG Fan 2/3A was started 20 minutes ago and all conditions were normal.

A Unit 2 drywell steam leak occurred.

Present conditions are as follows:

- RPV water level 15 inches and steady
- Drywell radiation 50 R/hr and steady
- Drywell pressure 2.2~~0~~psig and steady

Regarding SBTG, the expected operator actions are to ...

- A. continue to run SBTG Train 2/3A and leave SBTG Train 2/3B in STBY.
- B. place SBTG Train 2/3B in PRI and then place SBTG Train 2/3A in OFF.
- C. place SBTG Train 2/3A in OFF and then place SBTG Train 2/3B in START B.
- D. place SBTG Train 2/3A in OFF and leave SBTG Train 2/3B in OFF.

Answer:

Ref(s):

Question pedigree:

B

DOS 7500-2 Rev 22

New

Explanation/Comments:

Initiation signal received 2.0 psig in drywell. Per DOS 7500-2, actions should be to place non-running train to "PRI" and the train under test to "OFF"

question replaced

NOT SRO ONLY

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
49	SRO	1	4.00	263000	2.1.32	3.8	263L-S1-07

During a failure of 250 VDC system, paralleling Unit 2 and Unit 3 250 VDC systems is prohibited unless certain operational requirements are met.

This is because paralleling 250 VDC ...

- A. utilizes WIRING that was NOT analyzed for cross-connected operation.
- B. utilizes BREAKERS that were NOT analyzed for cross-connected operation.
- C. exceeds system design loading requiring at least ONE unit be at least in Cold Shutdown.
- D. exceeds system design loading requiring BOTH units be at least in Cold Shutdown.

Answer:

Ref(s):

Question pedigree:

D

DOA 6900-04. Rev 8

New

Explanation/Comments:

If the other units battery is used to restore power to a bus which is not part of its normal configuration, the remain battery also becomes inoperable because it is outside it design load profile.

Required understanding of 250v system basis & how to apply. -SRO task

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
51	BOTH	2	3.13	264000	A3.03	3.4 / 3.4	26204LK005

An off-site event occurs which results in a TOTAL LOSS of power to Unit 3.

The following is noted 15 seconds AFTER the loss of power.

- The 2/3 EDG has auto-started AND has auto-closed to Bus 33-1.
- The Unit 3 EDG has auto-started but has NOT auto-closed.
- EDG 3 voltage indicates 4200 volts.
- EDG 3 frequency indicates 58.2 Hz.
- The Auxiliary Power System has otherwise responded as designed.

Which of the following explains why the U3 EDG output breaker did NOT close?

- A. EDG 3 voltage is too high.
- B. EDG 3 frequency is too low.
- C. The 30-second time delay relay has NOT timed out.
- D. The closing of EDG 2/3 precludes the closing of EDG 3 output breaker.

Answer:

B

Ref(s):

264L-S1

Question pedigree:

LORT Bank #10 26400B0231

Explanation/Comments:

Auto Close feature on EDG output breaker requires Frequency near normal (greater than approx. 59 hertz) Nominal speed and voltage (900rpm , 4160 volt). There is no output breaker interlock between 2/3 EDG and Unit 3 EDG.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
53	SRO	2	3.75	288000	2.1.12	4.0	223L-S5-07a.

Provide copy of Technical Specifications Section 3.2.A and Table 3.2.A-1.

Unit 2 is operating at rated power.

- The 902-3 G-15, RX BLDG VENT CH B DOWNSCALE, annunciator alarms.
- The Channel B radiation monitor on the 902-10 panel indicates downscale.
- All other indications are normal.

What action(s) is (are) required by the applicable Tech Spec(s)?

- A. Restore Reactor Bldg Vent Monitor Channel B to operable status within 12 hours or place the monitor in the tripped condition.
- B. Restore Reactor Bldg Vent Monitor Channel B to operable status within 24 hours or establish Secondary Containment Integrity with the Standby Gas Treatment system operating within the next one hour.
- C. Restore Reactor Bldg Vent Monitor Channel B to operable status within 1 hour or establish Secondary Containment Integrity with the Standby Gas Treatment system operating within the next one hour.
- D. Place Reactor Bldg Vent Rad Monitor Channel B in the tripped condition within one hour. Restore the inoperable monitor to operable status with its trip setpoint adjusted to less than or equal to 10 mR/hr.

Answer:

Ref(s):

Question pedigree:

B

TS 3.2.A, Action 2 and Footnote (a)

LOC Exam Bank #14 22302B0301

TS Table 3.2.A-1

Explanation/Comments:

The Reactor Bldg Vent Monitor contain a bug source to prevent them from going downscale. The monitor would have to be declared inoperable if it were downscale.

With one of the Rad Monitors inoperable, the minimum number is not bet for one of the two trip systems. If the rad monitor is placed in the tripped condition, a trip would occur so the footnote (a) on Tech Spec page 3/4.2-1 applies.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
55	RO	1	3.14	290001	A4.09	3.2	272L-S2-05

Unit 2 and Unit 3 are operating at rated conditions.

The 3A Reactor Building Ventilation Radiation Monitor was failed downscale.

Which of the following describes the expected ventilation alignment if the 3B Reactor Building Ventilation Radiation Monitor subsequently failed downscale?

	<u>U2 Reactor Bldg Ventilation</u>	<u>U3 Reactor Bldg Ventilation</u>
A.	Running	Running
B.	Running	Tripped and Isolated
C.	Tripped and Isolated	Tripped and Isolated
D.	Running	Tripped and Isolated

Answer:

C

Ref(s):

DAN 902(3)-3 G-14, Rev. 08

Explanation/Comments:

Both Reactor Building Vent Rad Monitors downscale on one unit or one high rad on either unit will result in a Reactor Building ventilation system isolation for both Units 2 and 3 and an automatic start of SBGT.

Overlaps w/Q# 100

SBGT
Standby
Standby
Running
Running
Question pedigree:
New

Removed to delete overlap

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
62	SRO	2	2.88	295007	2.4.1	4.6	29502LP001

NOT

Unit 3 was operating at rated power with the following equipment OOS:

- EHC Pump 3A
- Isolation Condenser

EHC Pump 3B tripped and the following alarms were received:

- 903-7 A-6, EHC SYSTEM PRESS LO
- 903-7 C-5, TURB TRIPPED EHC OIL PRESS LO
- 903-5 A-12, CH A/B STOP VLVS CLSD
- 903-5 C-13, CHANNEL A/B RPV PRESS HI-HI
- 903-4 A-15, ISOL CONDR CH A/B INITIATION

The operating crew should enter _____ and can stabilize reactor pressure using _____.

- A. DGP 02-03; turbine bypass valves.
- B. DGP 02-03; ADS valves in the preferred sequence.
- C. DEQP 100; turbine bypass valves.
- D. DEOP 100; ADS valves in the preferred sequence.

Answer:

Ref(s):

Question pedigree:

D

DEOP 100 Rev 09

New

Explanation/Comments:

The CH A/B STOP VLVS CLOSED alarm indicates that a reactor scram did or should have occurred.

The RPV Press HI-HI and IC Initiation alarms indicates that reactor pressure exceeded 1060 psig, a DEOP 100 entry condition.

The MSIVs should still be open but the turbine bypass valves are not available since EHC pressure is lost. The isolation condenser is OOS so ADS would be an option for pressure control.

diagnosis is for an SRO even though an RO may be able to complete the task/question.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
67	BOTH	1	2.25	295010	AK2.01	3.2 / 3.3	223L-S1-01

Provide DOP 1600-02 Rev 10 Attachment A.

If Drywell pressure was 1.9 psig.

Which of the following represent UNSAFE torus parameters?

	Torus Pressure	Torus Level
A.	0.5 psig	- 4.5 inches
B.	1.3 psig	-4.5 inches
C.	1.3 psig	-2.0 inches
D.	0.5 psig	-2.0 inches

Answer:

A

Ref(s):

DOP 1600-02 Rev 10

Question pedigree:

New

Explanation/Comments:

Only 1.4 psid and -4.5 inches fall in the UNSAFE region of DOP 1600-02 Attachment A.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
70	SRO	2	3.25	295013	2.4.1	4.6	29502LP019

NOT

Unit 3 was operating at 50% power with the HPCI pump and system operability surveillance in progress.

Alarm 903-4 A-18, DIV 1 TORUS WTR BULK TEMP HI, was received.

What action(s) should be taken?

- A. Enter DEOP 200-1 and operate all available torus cooling.
- B. Check torus bulk temperature and if above 95°F then scram and enter DEOP 100 and DEOP 200-1.
- C. Check torus bulk temperature and if above 95°F then enter DEOP 200-1 and operate all available torus cooling
- D. Operate all available torus cooling and monitor torus temperature. Entry into DEOP 200-1 is not required since the high torus temperature is from a planned surveillance.

Answer:

C

Ref(s):

DAN 902(3)-4 A-18 Rev 14
DEOP 200-1

Question pedigree:

New

Explanation/Comments:

TORUS WATER BULK TEMP HI alarms at or BEFORE 90°F. DEOP 200-1 entry on High Torus Water Temp is 95°F. DEOP 200-1 torus temp leg (point 19) directs operators to operate all available torus cooling.

question was replaced, facility instructors believe this is an SRO question as written

Which one of the following

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
84	BOTH	1	3.00	295022	AK2.07	3.4 / 3.6	201L-S1-01

What is the minimum reactor pressure that can provide the force required to scram the control rods by reactor pressure only? (CRDM design, not procedural limitation)

- A. 300 psig
- B. 400 psig.
- C. 500 psig
- D. 600 psig

Answer:

B

Ref(s):

SDM 201003

Question pedigree:

New

Explanation/Comments:

Per ref, during a reactor pressure only scram, the drive cannot be scrambled below 400 psig.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
87	SRO	2	2.00	295024	EA2.01	4.4*	29502LP004 (SRO)

A Drywell leak and reactor scram have occurred on Unit 3.

Given the following conditions:

- Torus sprays have been initiated.
- Drywell temperature is 230°F (point 5) and 241°F (point 6).
- Drywell pressure is 7 psig and increasing.

If drywell pressure reaches 9.5 psig, the NSO would be directed to ...

- A. blowdown IAW DEOP 400-2.
- B. start ALL available drywell coolers.
- C. keep trying to lower drywell and torus pressure.
- D. trip recirculation pumps AND drywell coolers AND initiate drywell sprays

Answer:

D

Ref(s):

DEOP 200-1

Question pedigree:

ILT Exam Bank #29502S0792

Explanation/Comments:

At 9 psig concern focussed on primary containment pressure.

With pressure greater than 9 psig, operators are directed to 1) trip recirculation pumps 2) trip drywell cooling fans and 3) start drywell sprays provided Drywell Spray Initiation Limit is met.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
88	BOTH	2	3.25	295024	EA2.06	4.1 / 4.1	223L-S1-06

An unisolable HPCI steam leak occurred in the Unit 3 drywell while operating at 50% power.

Given the following conditions:

- Drywell pressure is 15 psig and increasing.
- The reactor is being cooled down using turbine bypass valves.
- Torus temperature has increased by two degrees.
- Torus pressure is 14 psig and increasing.

- the reactor successfully scrammed

Based on the above, you conclude that . . .

- A. all equipment has operated as designed and torus conditions are as expected for the event.
- B. there is a stuck open Torus to Drywell vacuum breaker.
- C. there is a stuck open relief valve vacuum breaker.
- D. there is a broken ADSV tee-quencher.

Answer:

B

Ref(s):

SDM 223001

Question pedigree:

New

Explanation/Comments:

All equipment has not operated as designed based on marked rise of torus pressure with little or no rise in torus water temperature. A stuck open relief valve vacuum breaker would direct energy to torus water inventory raising temperature and minimizing torus pressure rise. A stuck open torus to drywell vacuum breaker directs energy to the torus air space as seen by marked pressure rise. The only energy input to water volume is surface heat transfer.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
97	BOTH	1	3.25	295034	EK1.01	3.8 / 4.1	29502LK050

Unit 3 was at rated conditions when a transient occurred.

- An Isolation Condenser steam leak occurred and was isolated.
- Isolation condenser area temperature is 170°F and is too high for personnel access.
- Valid Reactor Building isolations are present on each of the following parameters:
 - Drywell Pressure
 - Reactor Building Exhaust Radiation
 - Reactor Water Level

Restarting Reactor Building Ventilation would allow safer access to the Isolation Condenser area ...

- A. but is NOT allowed due to the Drywell Pressure isolation.
- B. but is NOT allowed due to the Reactor Building Exhaust Radiation isolation.
- C. but is NOT allowed due to the Reactor Water Level isolation.
- D. and may be performed after bypassing the isolation signals.

Answer:

B

Ref(s):

295L-S3

Question pedigree:

New

Explanation/Comments:

Only drywell pressure and RPV water level isolations are allowed to be bypassed since they do not indicate a release hazard. Reactor building exhaust radiation above the isolation setpoint would be indicative of a potential radioactive release problem and would NOT be allowed to be bypassed.

Facility trains ^{on} this material as written making the question a fundamental question.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
99	BOTH	1	3.75	295037	EK1.01	4.1* / 4.3*	29501LK031

An automatic scram occurred on Unit 3.

Control rods did not fully insert and reactor power decreased to 10%.

Containment parameters will require an emergency depressurization within fifteen minutes if trends are not changed.

Opening the bypass valves to rapidly reduce reactor pressure should ...

- A. be performed to allow for reduction of reactor power.
- B. be performed to anticipate an emergency depressurization.
- C. NOT be performed since the pressure reduction will add significant positive reactivity.
- D. NOT be performed since the pressure reduction will result in removal of boron from the RPV.

Answer:

C ?

Ref(s):

295L-S1

Question pedigree:

New

Explanation/Comments:

With the reactor still at power, the rapid depressurization will add significant positive reactivity to the core complicating the power actions underway. It is for this reason that an emergency depressurization is only performed if the conditions that require it are actually met.

Correct as written for the case of AN ATNS.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
100	BOTH	2	2.00	295038	EA1.06	3.5 / 3.6	261L-S1-01

Unit 2 & 3 were at rated power with the following conditions:

- A SBTG train in PRIMARY.
- B SBTG train in STANDBY.

Which of the following describes the TOTAL expected SBTG flow following a reactor building ventilation isolation on Reactor Building Exhaust Radiation without operator action?

- A. ~ 3000 scfm
- B. ~ 4000 scfm
- C. ~ 6000 scfm
- D. ~ 8000 scfm

Answer:

B

Ref(s):

SDM 261000

Question pedigree:

New

Explanation/Comments:

The normal flow through the SBTG train is 4000 scfm.

On an initiation signal, the primary fan will start. The standby fan will wait 20 seconds and then start if the fan selected to PRIMARY has low flow or a heater off condition.

Analysis of SBTG must be completed before answer can be determined. ^{higher} answer is correct.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
102	SRO	2	2.50	500000	EA2.02	3.5	223L-S1-06

A small LOCA occurred on Unit 2 resulting in the following conditions:

- Drywell pressure was 3.5 psig.
- RPV level was +15 inches.

WAS

The NSO asked to obtain primary containment oxygen concentration.

He proceeded to the 923-5A panel and reported that concentration was 1.5%.

Which of the following describes why this IS/ IS NOT a valid report?

- A. This IS a valid report because this panel monitors the containment in post accident conditions.
- B. This IS NOT a valid report because this panel only monitors hydrogen in post accident conditions.
- C. This IS NOT a valid report because the containment atmospheric sampling system (CAS) isolates on a Group 2 signal.
- D. This IS NOT a valid report because the only way to get an oxygen concentration of the primary containment in a LOCA condition is from HRSS.

Answer:

C

Ref(s):

DAN 202(3)-5 E-5 Rev 17

Question pedigree:

LOC Exam Bank #2 22301B0131

Explanation/Comments:

The CAS sample valves automatically close on a Group II isolation. The CAM on 920-55(56) initiates and provides H₂ and O₂ indication.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
104	<u>SRO</u>	2	2.50	295019	AA2.02	4.1	27800LP001

NOT

Given the following conditions:

- Unit 2 is at 100% power.
- All available Instrument Air Compressors are in operation.
- 2B Instrument Air Dryer Tower Blowdown valve becomes stuck in the open position.
- Unit 2 Instrument Air pressure is at 80 psig and dropping.

Based on these conditions you should direct operators to:

- A. IMMEDIATELY scram the reactor and close the outboard MSIVs
- B. verify that the Feedwater Reg Valves have transferred to the back-up nitrogen supply.
- C. adjust the RWCU Pressure Controller to account for the RWCU Flow Control valve drifting open.
- D. verify the Unit 2 Instrument Air to Unit 3 Instrument Air cross-tie has automatically opened..

Answer:

B

Ref(s):

DOA 4700-01

Question pedigree:

27800B0091

A correct also

Explanation/Comments:

A manual scram and closure of the outboard MSIVs is not directed until air pressure drops to 55 psig. BOTH the RWCU controllers fail closed on a loss of Instrument air. The Unit 2 Instrument air to Unit 3 Instrument Air cross-tie does not open automatically. The Unit 2 IA to Unit 2 Service Air cross-tie does not automatically open.

question replaced.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
106	RO	1	3.67	294001	2.1.11	3.0	201L-S1-07

? Ro job (with arrow pointing to Exam RO)
2 (with arrow pointing to Cog Level 1)

Unit 3 is operating at rated power.

The accumulator for control rod E-07 has been inoperable for 2 hours.

Control rod E-7 is at position 48.

903-5 G-2, ACCUMULATOR LVL HI/PRESS LO is received and the accumulator light is lit for control rod E-11 which is at position 48.

It is then reported that the accumulator pressure for control rod E-11 is 750 psig.

The action(s) required by technical specifications is (are) to . . .

- A. immediately place the reactor mode switch in the Shutdown position.
- B. declare control rods E-07 and E-11 inoperable. Immediately verify that at least one control rod drive pump is operating.
- C. declare control rods E-07 and E-11 inoperable. Verify within one hour that at least one control rod drive pump is operating.
- D. restore the accumulator for control rod E-07 to operable status within the next 6 hours or declare control rod E-07 inoperable

Answer:

B

Ref(s):

TS 3.3.G, action 1.c.

Question pedigree:

New

Explanation/Comments:

The accumulator for control rod E-11 is inoperable since the pressure is less than 940 psig. Both control rods must be declared inoperable and the operator must immediately verify that one control rod drive pump is operating by inserting at least one withdrawn control rod at least one notch.

~~Duplicate Q?~~

Replaced Q with a memory level RO question.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
107	SRO	2	2.00	294001	2.1.12	4.0	299L022-01

Provide TS 3.6.B.

Unit 2 is operating at near rated power.

The NSO reports that indicated flow on two jet pumps differs from the established pattern by more than 10%.

All other recirculation parameters are normal.

Which of the following describe the action that must be taken?

- A. Be in at least HOT SHUTDOWN within 12 hours.
- B. Be in at least HOT SHUTDOWN within 12 hours and COLD SHUTDOWN within the next 24 hours.
- C. Restore flow indication for both of these jet pumps within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- D. Restore flow indication for at least one of these jet pumps within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.

Answer:

D

Ref(s):

TS 3.6.B

Question pedigree:

LOC Exam Bank #22 29901B0211

Explanation/Comments:

Both jet pumps are outside of their allowed range for the given core flow. Since there less than 2 of the conditions listed in T.S. 4.6.B.1 occurring (two out of three indications are SAT) T.S. 3.6.B. Action 1 does NOT apply. T.S. 4.6.B. Action 2 does apply Restore flow indication for at least one of these jet pumps within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours.

Replaced - direct look up question w/ provided reference.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
110	RO	1	2.75	294001	2.1.8	3.8	20200LP008

Unit 2 is shutdown.

Local adjustment of Reactor Recirculation pump 2A speed is required.

Which of the following describes the MINIMUM requirements to perform this evolution?

- A. Communication with any qualified Operator prior to adjustment. *licensed*
- B. Communication between the Control Room and any qualified Operator at the motor generator.
- C. Communication with an active licensed operator with no license restriction which would prohibit solo operations prior to adjustment.
- D. Communication between the Control Room and an active licensed Operator at the motor generator with no license restriction which would prohibit solo operations at the motor generator.

Answer:

B

Ref(s):

DOP 0202-12 Rev 15

Question pedigree:

New

Explanation/Comments:

In order to perform Recirc MG Scoop Tube Manual Local Operation, communications must be established between the Control Room AND the operator at the applicable recirc MG set.

With the unit in Shutdown or Refuel Mode of operation, local scoop tube operation may be performed by a qualified Operator.

change not required

RO TASK?

Q_ID	Exam	Cog Level	Difficulty	Sigh	KA	Imp	Objective
113	BOTH	2	3.57	294001	2.2.24	2.6 / 3.8	263L-S3-07

Provide copy of TS 3.9.C.

Unit 2 has been shutdown for 10 days and coolant temperature is 190°F.

Unit 3 is at rated power.

Battery testing has determined that the 250 Vdc Unit 2 battery must be replaced.

The battery has been out of service for testing 5 days this cycle.

What Technical Specification actions are required for Unit 3?

- A. None if the Unit 3 battery is aligned to Unit 3.
- B. Restore the Unit 2 battery to operable status within 2 days, or be in HOT SHUTDOWN within 12 hours.
- C. Restore the Unit 2 battery to operable status within 7 days, or be in HOT SHUTDOWN within 12 hours.
- D. Restore the Unit 2 battery to operable status within 9 days, or be in HOT SHUTDOWN within 12 hours.

Answer:

D

Ref(s):

TS 3.9.C.

Question pedigree:

New

Explanation/Comments:

Since the battery was out of service for 5 days already, the battery may be inoperable for an additional nine days during the current cycle as long as it is determined that a 250 volt battery needed to be replaced (Note b)

Operations expects ROs to perform this task.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
117	BOTH	2	2.63	294001	2.3.2	2.5 / 2.9	29900LK045

An Operator has a tagout that requires second or independent verification.

For which of the following conditions can the Shift Manager waive independent verification?

- A. An OOS card to be hung on a drain valve on the #2 Main Turbine Stop Valve at rated power.
- B. An OOS card to be hung on the south instrument air cross-connect valve 8 feet off the floor in the turbine building 517 level.
- C. A Temporary Modification on the 2/3 Diesel Air Start header.
- D. A Temporary Modification on the 2/3A SBTG Charcoal Filter.

Answer:

A

Ref(s):

AD-AA-104-103 Rev 2

Question pedigree:

New

Explanation/Comments:

The Shift Manager may WAIVE verification requirements when verification may incur radiation exposure in excess of 5 mRem ...

Station modified distractor to prevent 2 correct answers.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
118	SRO	1	3.50	294001	2.3.3	2.9	290L-S1-03

NOT

Unit 2 is currently operating at rated power.

The NLO reports from the field that a loss of domestic water has occurred.

As the Unit Supervisor you must declare the . . .

- A. Control Room HVAC inoperable.
- B. Control Room Fire Protection system inoperable.
- C. Unit 2 Service Water Radiation Monitor inoperable.
- D. Unit 2 and Unit 3 Service Water Radiation Monitors inoperable.

Answer:

C

Ref(s):

DOA 4200-01 Rev 3

Question pedigree:

New

Explanation/Comments:

Unit 2 / Unit 3 difference question. Domestic water supplies drive water for Unit 2 Service Water Radiation Monitor.

*Inop decision is already made, only system knowledge is left
Requires analysis beyond RO required. SRO Q.*

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
122	SRO	1	2.50	294001	2.4.32	3.5	29501LP059

Unit 2 was at rated conditions when ANNUN DC PWR FAILURE alarms are received on several panels simultaneously.

A bell inside Panel 902-4 sounds.

Which of the following describes the expected operator actions?

- A. Scram the reactor due to the loss of all annunciators. The Shift Manager should evaluate for a possible GSEP condition.
- B. Verify that the normal AC power supply is still available by performing an annunciator check on each affected panel. Notification of the Shift Manager IS NOT required.
- C. Verify that the normal AC power supply is still available by performing an annunciator check on each affected panel. Notification of the Shift Manager IS required.
- D. Determine the cause of the loss of all annunciators. The Shift Manager should evaluate for a possible GSEP condition.

Answer:

D

Ref(s):

DAN 902(3)-5 H-3 Rev 5

Question pedigree:

New

Explanation/Comments:

Receipt of these alarms indicate a failure of the panels Annunciator System. Operators should determine the cause of the loss of annunciators and attempt to restore. The Shift Manager should evaluate for a possible GSEP condition (EPIP 200-T1 MU6)

Req Knowledge

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
123	RO	2	2.25	294001	2.4.49	4.0	24501LP011

Unit 2 was in startup with reactor power at 30%.

The NSO manually tripped the turbine and noticed turbine speed was NOT decreasing and the Turbine Stop valves were still OPEN.

What operator actions must be performed?

- A. Trip the main generator and close the MSIVs.
- B. Trip the main generator and open the bypass valves.
- C. Scram the reactor and close the MSIVs.
- D. Scram the reactor and open the bypass valves.

Answer:

C

Ref(s):

DOA 5600-01, Rev. 14

Question pedigree:

LOC Exam Bank #2 29501B0191

Explanation/Comments:

If Stop Valves remain open after depressing the turbine trip pushbutton the operator is directed to scram the reactor and close the MSIVs.

first line of question was modified to ensure "higher" cognitive skill.

Q_ID	Exam	Cog Level	Difficulty	System	KA	Imp	Objective
128	^{NOT} SRO	2	3.25	294001	2.4.49	4.0	21200LK004

Unit 3 is operating at rated power with an IMD surveillance on the RPS in progress.

The NSO noticed the following:

- Scram solenoid group indicating lights A1, A2, B1, B2, B3, and B4 extinguish.
- Scram solenoid group indicating lights A3, and A4 remain lit.

The NSO is required to . . .

- A. depress the MANUAL SCRAM CH A pushbutton and place the Reactor Mode Switch in SHUTDOWN.
- B. depress both MANUAL SCRAM CH A and MANUAL SCRAM CH B pushbuttons and place the Reactor Mode Switch in SHUTDOWN.
- C. depress the MANUAL SCRAM CH A pushbutton and initiate ARI.
- D. depress the MANUAL SCRAM CH A and MANUAL SCRAM CH B pushbuttons and initiate ARI.

Answer:

Ref(s):

Question pedigree:

B

DOA 0500-02, Rev 01

New

Explanation/Comments:

IF a Partial Full Scram occurred, THEN depress both MANUAL SCRAM CH A and MANUAL SCRAM CH B pushbuttons AND place the Reactor Mode Switch in SHUTDOWN.

Question replaced.