U.S. Nuclear Regulatory Commission
Site-Specific
Written Examination

Applicant Information	
Name:	Region: I / II / III / IV
Date:	Facility/Unit: **Perry**
License Level: RO / (SRO)	Reactor Type: W / CE / BW / **GE**
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. The passing grade requires a final grade of at least 80.00 percent. Examination papers will be collected ~~five~~ six hours after the examination starts.

Applicant Certification

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

_____
Applicant's Signature

Results	
Examination Value	100.00 Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent

Perry Nuclear Power Plant
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QUESTION Common 001

The following plant conditions exist:

- The reactor is in cold shutdown.
- Reactor water level is being maintained with the CRDH and RWCU Systems.
- CRDH System flow is in Automatic at 60 gpm.
- RWCU blow down flow is adjusted to 60 gpm.

Surveillance testing of the Reactor Protection System results in a full reactor scram signal.

Assume no operator actions have been performed.

Which one of the following describes the response of the CRDH System and reactor water level?

CRDH total system flow will...

A. decrease and reactor water level will decrease.

B. decrease and reactor water level will increase.

C. increase and reactor water level will decrease.

D. increase and reactor water level will increase.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	2
	K/A#	201001.A3.05	
	Importance Rating	2.8	2.8

Proposed Question: See attached Common 001

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – CRDH system flow increases due to diverting water to the charging header.

C – although CRDH system flow is higher, this water is diverted to the charging header and RPV level will actually increase since CRDH flow is greater than RWCU blowdown flow.

Technical Reference(s):	Reference Attached: ___X__
SDM C11(CRDH)	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-007-C11(CRDH) OBJ B &C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the impact of a scram on CRDH system flow and the resulting impact on reactor water level.

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QUESTION Common 002

The plant is operating at 40% reactor power with Main Turbine Stop Valve (TSV) testing in progress. TSV N11-F200A is in the full closed position for testing when TSV N11-F200B fails closed.

Which one of the following is the expected response of the RPS System, if any?

A. Full Scram.

B. Half Scram.

C. No response, due to the specific TSV combination involved.

D. No response, since this RPS trip is bypassed under current plant conditions.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	212000.K5.02	
	Importance Rating	3.3	3.4

Proposed Question: See attached Common 002

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – This logic requires 3 TSV to be closed to initiate a Full Scram signal.

C – This is only true for TSV B&C or A&D combination.

D – The RPS TSV closure trip is only bypassed below 38% reactor power.

Technical Reference(s):	Reference Attached: __X__
SDM C71	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-C71 OBJ F

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 003

Refueling is in progress when a rupture of the Fuel Pool Cooling and Cleanup (FPCC) Return Header to the Upper Containment Pool occurs.

Which one of the following design features will minimize the inventory loss from the Upper Containment Pool?

A. Diffusers on the Return Header lines become uncovered.

B. Containment Isolation Valves automatically close on Upper Containment Pool low level.

C. Siphon breakers on the Return Header lines become uncovered.

D. FPCC Surge Tank Fill From CST Valve, G41-F045 automatically opens on Upper Containment Pool low level.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	3	3
	K/A#	233000.K4.06	
	Importance Rating	2.9	3.2

Proposed Question: See attached Common 003

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The return header line diffusers are located at the bottom of the pool.

B – The Containment Isolation Valves automatically close on a BOP Isolation Signal, not Upper Containment Pool Low Level..

D – The FPCC makeup to the upper containment pool has no auto open feature.

Technical Reference(s):	Reference Attached: ___X___
SDM G41	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-G41 OBJ B

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	___X___	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	___X___	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 004

The plant is operating at 100% reactor power when a loss of RPS Bus 'B' occurs.

Simultaneously the following annunciator alarms occur on panel H13-P601:

- MAIN STEAM LINE RADIATION DOWNSCALE
- MAIN STEAM LINE RADIATION HI HI/INOP

Which one of the following caused these annunciators?

Loss of power to ...

A. 'A' and 'D' Main Steam Line Radiation Monitors.

B. 'B' and 'C' Main Steam Line Radiation Monitors.

C. 'A' and 'C' Main Steam Line Radiation Monitors.

D. 'B' and 'D' Main Steam Line Radiation Monitors.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	272000.K6.01	
	Importance Rating	3.0	3.2

Proposed Question: See attached Common 004

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A, B, C – each answer contains either MSL rad monitor A or C both of which are energized via RPS A.

Technical Reference(s):	Reference Attached: __X___
ONI-C71-2; SOI-C71	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-D17A OBJ D; OT-3036-005-C71 OBJ C,L, O

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 005

The following plant conditions exists:

- The reactor is operating at 90% power.
- One of the two running Reactor Feed Pumps Turbines tripped.
- Reactor water level decreased to +188 inches and then returned to normal level.

Which one of the following describes the operational concern during this transient?

A. Moisture carryover can occur which could lead to a reduction in Reactor Recirculation Pump Net Positive Suction Head.

B. Moisture carryover can occur which could lead to excessive moisture impingement on the Main Turbine blades.

C. Steam carryunder can occur which could lead to a reduction in Reactor Recirculation Pump Net Positive Suction Head.

D. Steam carryunder can occur which could lead to excessive moisture impingement on the Main Turbine blades.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295009.AK1.01	
	Importance Rating	2.7	2.9

Proposed Question: See attached Common 005

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – a low water level results in steam carryunder not moisture carryover.

D – Main Turbine blade impingement is a result of moisture carryover.

Technical Reference(s):	Reference Attached: __X__
SDM B21(NBPI); GP Themo Text Chapter 8	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3302-004-08 OBJ 16

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to recognize potential conditions which result steam carryunder (low water level) and operational implications of reactor recirculation.

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QUESTION Common 006

The plant is operating at 100% reactor power when a chemical intrusion occurs.

Chemistry samples the reactor water and determines that some fuel elements have failed.

Subsequent to the sample, the following alarms occurred:

- OG PRE-TREAT PRCS RAD MON RAD HIGH (H13-P604)
- OG POST-TREAT PRCS RAD MON A/B RAD HI (H13-P604)
- MAIN STEAM LINE RADIATION HIGH (H13-P601)
- MAIN STEAM LINE RADIATION HI HI/INOP (H13-P601)

Which one of the following describes the automatic response of the Nuclear Steam Supply Shutoff System (NSSSS) to this condition?

A. Off-Gas System isolation.

B. Main Steam Line isolation.

C. Steam Jet Air Ejector isolation.

D. Reactor Water Sample isolation.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	295017.AK2.14	
	Importance Rating	4.0	4.1

Proposed Question: See attached Common 006

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Offgas will only isolate on a Offgas Post Treat 3xHI condition (this is not a NS4 isolation)

B – the MSIVs do not automatically isolate on high radiation signal (previous design did).

C – Steam Jet Air Ejectors do not have a high rad signal isolation.

Technical Reference(s):	Reference Attached: ___X__
ONI-J11-1 Section 2.0; ARI-H13-P601-19 (B2)	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-002-B21(NS4) OBJ H

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 007

While removing a fuel channel from a spent fuel bundle in the Fuel Handling Building fuel preparation machine the following conditions occur:

- All local area radiation monitors suddenly alarm.
- ONI-J11-2, Fuel Bundle Rupture has been entered.
- A Fuel Handling Building evacuation is ordered.

Which one of the following actions is required?

The fuel bundle should be...

A. moved to its designated fuel pool storage location.

B. left at its current position and immediately re-channeled.

C. lowered in the fuel preparation machine to the full down position.

D. left at its current position and the fuel preparation machine air isolation valve closed.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	3	1
	K/A#	295023.AA1.03	
	Importance Rating	3.3	3.6

Proposed Question: See attached Common 007

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – this is a required action for fuel bundles being moved with the refuel bridge.

B – this would require raising the fuel bundle in the FPM and is not allowed by ONI-J11-2.

D – this action is contrary to the guidance in ONI-J11-2.

Technical Reference(s):	Reference Attached: ___X___
ONI-J11-2 Immediate Action	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-007-J11 OBJ I

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 008

The following plant conditions exist:

- An ATWS has occurred.
- Reactor power is 21%.
- Reactor pressure is 1080 psig.
- SLC system indications are:

Indication	SLC A	SLC B
Pump Running Status	Red light On	Red light On
Pump Discharge Pressure	1100 psig	1100 psig
Squib Continuity Light	Off	On

Which one of the following describes the Standby Liquid Control (SLC) System status?

The SLC System is ...

A. not injecting.

B. injecting with SLC Pump 'A' only.

C. injecting with SLC Pump 'B' only.

D. injecting with both SLC Pumps.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295037.EA1.04	
	Importance Rating	4.5	4.5

Proposed Question: See attached Common 008

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A, B, C – The squib continuity light is OFF on the "A" squib valve indicating it has fired; the system is cross-tied such that any squib valve open will provide both pumps an injection flow path.

Technical Reference(s):	Reference Attached: __X___
SDM C41	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-000-C41 OBJ B, E, F &L

Question Source:	Bank # _____
	Modified Bank # _____ (Note changes or attach parent)
	New __X__

Question History:	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis __C__

10 CFR Part 55 Content:	55.41 __X__
	55.43 _____

Comments (Why is it an upper level question):
Requires the student to comprehend the control room indications (squib lights and reactor pressure versus pump pressure) to determine correct SLC system operation.

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QUESTION Common 009

The following plant conditions exist:

- The plant is in MODE 2 and a reactor startup in progress.
- Only RACS Channel 1 is selected for display on panel H13-P680.
- IRM Channel 'B' fails upscale.

Which one of the following describes the Rod Control and Information System (RC&IS) indication(s) the operator will observe on panel H13-P680?

A. No control rod block is present; the WITHDRAW BLOCK indicator light is lit.

B. No control rod block is present; the WITHDRAW BLOCK indicator light is not lit.

C. Control rod block is present; the WITHDRAW BLOCK indicator light is lit.

D. Control rod block is present; the WITHDRAW BLOCK indicator light is not lit.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	201005.K6.04	
	Importance Rating	3.0	3.2

Proposed Question: See attached Common 009

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – A rod block is initiated for IRM upscale when the reactor mode switch is in STARTUP.

C – Since RACS channel 1 is selected for display, the channel does not see the withdraw block (since IRM B is assigned to channel 2). Therefore the withdraw block indicator light will not be lit.

Technical Reference(s):	Reference Attached: ___X__
SDM C11(RCIS)	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-C11(RC&IS) OBJ D&L

Question Source:	Bank #	_505__	
	Modified Bank #	_____	(Note changes or attach parent)
	New	_____	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of the RC&IS system, including expected indications, based on the initial conditions provided.

QUESTION Common 010

Technical Specification 3.4.3, Jet Pumps, requires the plant to be shutdown when any Jet Pump is determined to be inoperable.

Which one of the following describes the Technical Specification bases for this Required Action?

An inoperable Jet Pump can...

A. decrease the blowdown area during a LOCA and reduce the ability to reflood the core.

B. decrease the blowdown area during a LOCA and increase the potential for power/flow instabilities.

C. increase the blowdown area during a LOCA and reduce the ability to reflood the core.

D. increase the blowdown area during a LOCA and increase the potential for power/flow instabilities.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	202001.K4.01	
	Importance Rating	3.9	3.9

Proposed Question: See attached Common 010

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A &B – The blowdown area can potentially increase (not decrease).

D – Although power to flow instabilities are a concern at reduced core flows, this is not the bases of this technical specification required action.

Technical Reference(s): Tech Spec 3.4.3 Bases; SDM B13	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-002-B13 OBJ D, E&F; OT-3037-006-08 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 011

The following plant conditions exist:

- A reactor startup/heatup is in progress.
- Reactor water level is +195 inches and slowly increasing.
- RWCU blowdown flow rate is increased to control RPV water level.

Subsequently the following alarms occur on panel H13-P680:

- RWCU F/D INLET TEMP HI
- RWCU ISOL F/D TEMP HI

Which one of the following describes the response of the Reactor Water Cleanup System?

A. Inboard isolation valve (G33-F001) closes; the RWCU Pump must be manually secured.

B. Inboard isolation valve (G33-F001) closes, the RWCU Pump automatically trips off.

C. Outboard isolation valve (G33-F004) closes, the RWCU Pump must be manually secured.

D. Outboard isolation valve (G33-F004) closes, the RWCU Pump automatically trips off.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	204000.A3.03	
	Importance Rating	3.6	3.6

Proposed Question: See attached Common 011

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A &B – only the outboard isolation valve closes on a filter demin high temperature.

C – The RWCU pump will automatically trip on low flow.

Technical Reference(s): SDM-G33 Table G33-4; ARI-H13-P680-01 (C1)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-G33/36 OBJ D&I

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of the RWCU system based on the initial plant conditions provided.

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QUESTION Common 012

The following plant conditions exist:

- A Loss of Coolant Accident has occurred.
- Drywell pressure is 1.8 psig.
- Reactor water level is +195 inches and stable.
- The High Pressure Core Spray (HPCS) Pump has been overridden to STOP.

Subsequently, Bus EH13 loses power and is re-energized by the Division 3 Diesel Generator.

Assume no additional operator actions were taken.

Which one of the following describes the current condition of the HPCS Pump?

The HPCS Pump is...

A. not running because the initiation logic was reset.

B. not running because the override logic was not affected.

C. running because the override logic was reset.

D. running because the initiation logic was not affected.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	209002.K2.03	
	Importance Rating	2.8	2.9

Proposed Question: See attached Common 012

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The initiation logic will not automatically reset because of a loss of AC power. The initiation logic is DC-powered, therefore, it is unaffected (i.e., still sealed-in due to LOCA signal).

C – The HPCS Pump remains overridden off after the loss of Bus EH13 and subsequent re-energization. The override logic is dc-powered, therefore, it is still sealed-in.

D – The HPCS Pump remains overridden off after the loss of Bus EH13 and subsequent re-energization. The initiation logic is DC-powered, therefore, it is unaffected (i.e., still sealed-in due to LOCA signal).

Technical Reference(s):	Reference Attached: __X___
SDM-E22A	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E22A OBJ E

Question Source:	Bank #	___X___	
	Modified Bank #	_____	(Note changes or attach parent)
	New	_____	

Question History:	Previous NRC Exam	___X___	(June 2001 Exam)
	Previous Quiz / Test	_____	

Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__C__

10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):
Requires the student to predict the response of the HPCS Pump based on initial plant conditions provided.

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QUESTION Common 013

The following plant conditions exist:

- The reactor is critical.
- Reactor power is on Range 3 of the Intermediate Range Monitors.
- Source Range (SRM) detectors are being withdrawn from the core.

Subsequently, SRM Channel 'B' –20 VDC power supply fails (0 Volts).

Which one of the following describes the response of the Source Range Monitoring System?

Assume no operator actions have been performed.

An SRM control rod block signal is…

A. not generated; SRM 'B' detector withdrawal from the core stops.

B. not generated; SRM 'B' detector withdrawal from the core continues.

C. generated; SRM 'B' detector withdrawal from the core stops.

D. generated; SRM 'B' detector withdrawal from the core continues.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	215004.K6.02	
	Importance Rating	3.1	3.3

Proposed Question: See attached Common 013

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – A control rod block is generated due to SRM INOP conditions.

C – A SRM control rod block signal is generated; however SRM withdrawal is not effected since it has a separate power source.

Technical Reference(s):	Reference Attached: __X___
SDM-C51(SRM); ARI-H13-P680-06 (C1)	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-C51 (SRM) OBJ B&D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of the SRM system based on the initial conditions provided.

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QUESTION Common 014

By design, Local Power Range Monitors (LPRMs) are not removed from the core during power operation.

Which one of the following design features is utilized to offset the effects of LPRM detector aging?

A. The LPRM flux amplifier gain can be increased.

B. The LPRM detector chamber is filled with a high pressure argon gas.

C. The LPRM detector chamber is coated with a 78% U-235 enrichment.

D. The LPRM ion chamber high voltage power supply can be increased.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	215005.K4.06	
	Importance Rating	2.6	2.8

Proposed Question: See attached Common 014

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – the chamber is filled with argon gas but this is not to extend detector life due to aging.

C – the chamber has an enrichment of 18% U-235, U-234 is loaded to add life.

D – the ion chamber operates at 100vdc, increasing voltage would take it out of ion region.

Technical Reference(s):	Reference Attached: __X___
SDM-C51 (PRM)	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-C51(APRM & OPRM) OBJ B

Question Source:	Bank #	___	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 015

The plant is operating at 60% reactor power when Reactor Recirculation Pump 'A' trips.

ONI-C51, Unplanned Change in Reactivity or Power, is entered and all applicable Immediate Actions are completed.

Which one of the following describes a method to determine core flow during single Reactor Recirculation loop operations, including the bases for this method?

The actual value of core flow can be determined using the...

A. core plate dP since reverse flow in the non-operating Jet Pumps may impact the value of indicated core flow.

B. core plate dP since isolation of the non-operating Reactor Recirculation loop will cause a loss of input from the Recirculation Loop Flow instrumentation.

C. sum of the jet pump loop total flows since isolation of the non-operating Reactor Recirculation loop will cause a loss of input from the Recirculation Loop Flow instrumentation.

D. sum of the jet pump loop total flows since reverse flow in the non-operating Jet Pumps may impact the value of indicated core flow.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295001.AK3.06	
	Importance Rating	2.9	3.0

Proposed Question: See attached Common 015

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B & C – total core flow does not utilize recirc loop flow as input.

D – Reverse flow through the non-operating jet pumps is positive, there-fore this method is not accurate.

Technical Reference(s):	Reference Attached: __X___
ONI-C51; SDM B33	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-007-B33 OBJ D&I

Question Source:		
	Bank #	_____
	Modified Bank #	_____ (Note changes or attach parent)
	New	__X__

Question History:		
	Previous NRC Exam	_____
	Previous Quiz / Test	_____

Question Cognitive Level:		
	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____

10 CFR Part 55 Content:		
	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):

Perry Nuclear Power Plant
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QUESTION Common 016

The following plant conditions exist:

- The reactor is operating at 100% power.
- 13.8 KV Bus L10 is being powered from Unit 2 Startup Transformer 200-PY-B.
- The Class 1E 4.16KV buses are being powered from Interbus Transformer LH-2-A.
- A Main Generator Lockout occurs.

Which one of the following describes the response of the AC Electrical Distribution System?

Bus L11 and Bus L12 ...

A. automatically transfer to Bus L10; the Class 1E 4.16KV buses remain on Interbus Transformer LH-2-A.

B. automatically transfer to Bus L10; the Class 1E 4.16KV buses automatically transfer to Interbus Transformer LH-1-A.

C. must be manually transferred to Bus L10; the Class 1E 4.16KV buses remain on Interbus Transformer LH-2-A.

D. must be manually transferred to Bus L10; the Class 1E 4.16KV buses automatically transfer to Interbus Transformer LH-1-A.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	2
	K/A#	295005.AA1.07	
	Importance Rating	3.3	3.3

Proposed Question: See attached Common 016

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – The 4.16KV buses have no automatic transfer capability.

C&D – The L10 bus will auto transfer on generator lockout regardless of which startup transformer is powering L10.

Technical Reference(s):	Reference Attached: __X___
SDM R10	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-R10 OBJ D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of the AC Electrical Distribution System based on the initial plant conditions provided and a Main Generator Lockout.

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QUESTION Common 017

RCIC automatically initiated due to a low reactor water level condition.

Assume no operator actions have been performed.

Which one of the following describes the response of the RCIC System when reactor water level reaches L8, including the bases for this response?

The RCIC turbine…

A. steam supply valve (E51-F045) closes to prevent flooding the Main Steam Lines.

B. steam supply valve (E51-F045) closes to minimize the amount of water added to the suppression pool from sources external to Containment.

C. trip throttle valve (E51-F510) closes to prevent flooding the Main Steam Lines.

D. trip throttle valve (E51-F510) closes to minimize the amount of water added to the suppression pool from sources external to Containment.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295008.AK3.08	
	Importance Rating	3.4	3.5

Proposed Question: See attached Common 017

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – This is the bases for the RCIC Pump Suction transfer on Suppression Pool Hi level and not the bases for the Level 8 closure of the steam supply valve.

C&D – The RCIC turbine does not trip on high water level

Technical Reference(s):	Reference Attached: __X___
Tech Spec 3.3.5.2 Bases; SDM E51	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-003-E51 OBJ D OT-3037-005-07 OBJ G

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 018

The following plant conditions exist:

- A loss of all high pressure injection systems has occurred.
- Reactor water level decreased to +125 inches.
- CRD flow was aligned per PEI-SPI 4.1, CRD Alternate Injection.
- SLC Pump 'A' was started per PEI-SPI 4.5, SLC Demin Water Alternate Injection.
- SLC Pump 'B' was unavailable due to a clearance.

Which one of the following describes the status of the Reactor Water Cleanup System isolation valves?

A. Only the inboard isolation valve (G33-F001) closed.

B. Only the outboard isolation valve (G33-F004) closed.

C. Only the inboard (G33-F001) and outboard (G33-F004) isolation valves closed.

D. All G33 inboard and outboard isolation valves closed.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295009.AA1.04	
	Importance Rating	2.7	2.7

Proposed Question: See attached Common 018

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A, B, C – L2 isolation signal closes all 8 G33 isolation valves.

Technical Reference(s): SDM-G33	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-G33/36 OBJ D

Question Source:
Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New __X__

Question History:
Previous NRC Exam _____
Previous Quiz / Test _____

Question Cognitive Level:
Memory or Fundamental Knowledge _____
Comprehension or Analysis __C__

10 CFR Part 55 Content:
55.41 __X__
55.43 _____

Comments (Why is it an upper level question):
Requires the student to predict the response of the RWCU system logic based on the initial conditions provided (specifically RPV L2 and SLC pump start).

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QUESTION Common 019

PEI-B13, RPV Control (Non-ATWS), was entered due to low reactor water level.

No other entry conditions were initially met.

Ten minutes later, the following parameters are reported:

- Reactor water level is +170 inches and increasing.
- Drywell pressure is 2.0 psig and increasing.

Which one of the following actions is required?

A. Exit PEI-B13, RPV Control (Non-ATWS), and enter PEI-T23, Containment Control.

B. Exit PEI-B13, RPV Control (Non-ATWS), and re-enter PEI-B13, RPV Control (Non-ATWS), at the beginning.

C. Enter PEI-T23, Containment Control, and continue executing PEI-B13, RPV Control (Non-ATWS), without re-entering at the beginning.

D. Enter PEI-T23, Containment Control, and continue executing PEI-B13, RPV Control (Non-ATWS), and re-enter at the beginning.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295010.G.2.4.1	
	Importance Rating	4.3	4.6

Proposed Question: See attached Common 019

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – B13 can not be exited when entry conditions are still met.

B – High drywell pressure is also an entry condition for T23.

C – Since high drywell pressure is an entry condition for B13, the procedure must be re-entered from the beginning while continuing to execute B13.

Technical Reference(s):	Reference Attached: __X___
PEI Bases Document; PEI-B13 & T23 Entry Conditions	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-005-02 OBJ B&D, OT-3402-004-09 OBJ B

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 020

A fire in the Control Room has forced all personnel to abandon the Control Room.

A reactor scram could not be initiated prior to evacuating the Control Room.

Which one of the following describes the preferred method for scramming the reactor, including the bases for this method?

Scram insertion via the...

A. ATWS UPS since this will not cause a MSIV closure.

B. ATWS UPS since this will not cause a loss of LPRMs/APRMs.

C. RPS Power Supply since this will not cause a MSIV closure.

D. RPS Power Supply since this will not cause a loss of LPRMs/APRMs.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	295016.G.2.4.34	
	Importance Rating	3.8	3.6

Proposed Question: See attached Common 020

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – Although preferred this method will cause certain LPRM/APRMs to be deenergized.

C&D – RPS not preferred since it will cause a MSIV closure.

Technical Reference(s):	Reference Attached: ___X__
ONI-C61	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-C61 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 021

The following plant conditions exist:

- The reactor is operating at 50% power.
- The Service Air and Instrument Air Systems are in their normal lineup.
- Instrument Air receiver pressure is 85 psig and decreasing.
- Service Air receiver pressure is 95 psig and decreasing.

Which one of the following describes the response of, if any, the Service Air/Instrument Air Cross-Connect Valves, including the bases for this response?

The Service Air/Instrument Air Cross-Connect Valves 1(2)P52-F050 are...

A. closed to completely isolate the Service Air and Instrument Air headers.

B. closed to prevent a leak in the Service Air header from impacting the Instrument Air header.

C. open; however they will close if Service Air receiver pressure decreases to 90 psig in order to completely isolate the Service Air and Instrument Air headers.

D. open; however they will close if Instrument Air receiver pressure decreases to 80 psig in order to prevent a leak in the Service Air header from impacting the Instrument Air header.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295019.AK3.03	
	Importance Rating	3.2	3.2

Proposed Question: See attached Common 021

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Check valves around the F050 valves allow service air to continue to supply instrument air when the F050 valves are closed.

C – F050 valves are closed. Service air can still supply instrument air header therefore they are not completely isolated from each other.

D – F050 valves are closed; there are no automatic actions at 80 psig in the IA receiver.

Technical Reference(s): SDM P51/52	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3036-004-P51/52 OBJ E.

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	X	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	C	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of the Service Air/Instrument Air System cross-connect valves based on the initial plant conditions provided and the bases for this response.

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QUESTION Common 022

The plant is in MODE 1 when a loss of RPS Bus 'A' occurs.

Which one of the following describes the response, if any, of the Service Air and/or Instrument Air Systems?

A. No valves close since only a half BOP isolation signal is generated.

B. INST AIR DRYWELL ISOL 1P52-F646 and SERVICE AIR DRYWELL ISOL 1P51-F652 close.

C. SA SUPPLY HDR CNTMT ISOL 1P51-F150 and INST AIR CNTMT ISOL VLV 1P52-F200 close.

D. PERS AL EL 603 SUPP AIR OTBD ISOL 1P52F160 and PERS AL EL 692 SUPP AIR OTBD ISOL 1P52F170 close.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295020.AK2.12	
	Importance Rating	3.1	3.2

Proposed Question: See attached Common 022

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – A BOP Isolation signal for several P51/P52 valves will occur if RPS Bus A is lost.

B – F646 logic is from Div I RHR, F652 will receive a BOP isolation signal (even though it is normally closed during MODE 1).

C – F200 logic is from Div I RHR, F150 will receive a BOP isolation signal (event though it is normally closed during MODE 1).

Technical Reference(s): ONI-C71-2; SDM P51/52	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-P51/52 OBJ E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	X	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	C	
10 CFR Part 55 Content:	55.41	X	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of the Service Air/Instrument Air Systems to a containment isolation signal caused by a loss of RPS bus.

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QUESTION Common 023

The following plant conditions exist:

- Reactor startup is in progress.
- Reactor pressure is 855 psig.
- Control rod 22-11 is at position 48. Its nitrogen accumulator has a cracked weld and is isolated for repair.

Subsequently, the running CRD Pump trips on low suction pressure.

CRD charging water header pressure indicates 1000 psig and decreasing.

The operator should place the Reactor Mode Switch in SHUTDOWN...

A. immediately.

B. immediately if another accumulator fault alarm is received on a withdrawn control rod.

C. within twenty minutes if a CRD Pump is not restarted.

D. within twenty minutes if another accumulator fault alarm is received.

ANSWER D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295022.AA1.02	
	Importance Rating	3.6	3.6

Proposed Question: See attached Common 023

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Only if reactor pressure is < 600 psig.

C – There is no time limit to restore the CRD pump with only one accumulator fault.

B – Not required with reactor pressure > 600 psig, have a twenty minute time limit to restart the CRD pump.

Technical Reference(s):	Reference Attached: __X___
ONI-C11-1	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-007-C11(CRDH) OBJ G&H; OT-3037-006-05 OBJ D

Question Source:	Bank #	_____	
	Modified Bank #	_793__	(Note changes or attach parent)
	New	_____	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to determine the correct time for placing the reactor mode switch in shutdown based on the initial plant conditions provided.

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QUESTION Common 024

During a valve lineup, an operator needs to check a valve in the open position.

It is noted that the valve has a red (open) locking device on it.

To check the valve in the open position, the operator should...

A. leave the locking device installed; verify the locking device and restraining mechanism are intact.

B. leave the locking device installed; turn the valve handwheel in the close direction no more than 1/4 to 1/2 of a turn, and then fully reopen the valve.

C. remove the locking device; turn the valve handwheel in the close direction no more than 3/4 of a turn, fully reopen the valve, and then replace the locking device.

D. remove the locking device; turn the valve handwheel in the open direction, verify that the valve handwheel moves less than 1/4 of a turn, and then replace the locking device.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	3	3
	Group #	CAT 1	CAT 1
	K/A#	2.1.29	
	Importance Rating	3.4	3.3

Proposed Question: See attached Common 024

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – Locked valve hand wheels should not be manipulated with locks on them.

C – Unlocking the valve is not required and if done (because valve is suspect) it should be closed no further than 1/2 turn.

D – Unlocking the valve is not required and if done (because valve is suspect) it should be closed no further than 1/2 turn.

Technical Reference(s): PAP-0205	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3039-008-02 OBJ A

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 025

Which one of the following describes the operational significance of maintaining control rods within designed rod sequence patterns during a reactor startup?

A. Ensures peak fuel enthalpies remain below design limits during a control rod drop accident below the Low Power Setpoint (LPSP).

B. Ensures peak fuel enthalpies remain below design limits during a control rod drop accident above the High Power Setpoint (HPSP).

C. Prevents an excessive change in heat flux during control rod withdrawal below the Low Power Setpoint (LPSP).

D. Prevents an excessive change in heat flux during control rod withdrawal only between 100% and 50% rod density.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	3
	K/A#	201003.K5.04	
	Importance Rating	3.1	3.4

Proposed Question: See attached Common 025

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B –Above the LPSP (20% power) the core voids are significant to prevent clad damage due to a rod drop.

C&D – The purpose of the Rod Withdraw Limiter is to prevent excessive changes in heat flux above the LPSP (20% power).

Technical Reference(s): SDM-C11 (RCIS); Tech Spec 3.1.6 Bases	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-C11(RCIS) OBJ B&J; OT-3037-006-05 OBJ B&C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 026

The following plant conditions exist:

- A reactor startup is in progress.
- The Reactor Mode Switch is in STARTUP/STANDBY.
- IRM Channel 'F' is bypassed on panel H13-P680.
- IRM Channel 'A' indication is on IRM Range 8 reading 75/125 and increasing.

When the operator depressed IRM Channel 'A' UP Range Switch, the expected change in IRM Channel 'A indication did not occur. (IRM Channel 'A' remained on IRM Range 8).

IRM Channel 'A' continues to increase as reactor power continues to increase.

Which one of the following describes the response of IRM Channel 'A', if any, including an action the operator can perform to mitigate the faulty UP Range Switch?

A. No trip response since the IRM control rod block and 1/2 scram trip signals are bypassed at IRM Range 8; IRM Channel 'A' can be bypassed on panel H13-P680.

B. No trip response since the IRM control rod block and 1/2 scram trip signals are bypassed at IRM Range 8; IRM Channel 'A' detector can be withdrawn to maintain its indication between 25/125 and 75/125.

C. IRM control rod block and 1/2 scram trip signals are generated; IRM Channel 'A' can be bypassed on panel H13-P680.

D. IRM control rod block and 1/2 scram trip signals are generated; IRM Channel 'A' detector can be withdrawn to maintain its indication between 25/125 and 75/125.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	2
	K/A#	215003.A2.06	
	Importance Rating	3.0	3.2

Proposed Question: See attached Common 026

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – IRM rod block and 1/2 scram trip signals are generated due to the reactor mode switch in startup and IRM on Range 8.

D – There is no procedural guidance to withdraw the IRM detector to maintain indication between 25/125 and 75/125 due to a valid failure.

Technical Reference(s): SDM C51(IRM); ARI-H13-P680-06 (B3)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-C51(IRM) OBJ D, F&G

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of IRM Channel 'A' based on initial plant conditions, including any procedural guidance which can be used to mitigate the situation.

Perry Nuclear Power Plant
NRC Written Examination
Data Sheets

QUESTION Common 027

The following plant conditions exist:

- A reactor startup is in progress following replacement of all fuel bundles.
- Reactor Protection System shorting links are removed.
- Reactor power is increasing with a stable positive period of 150 secs.
- SRM Channel 'A' detector is stuck and will not withdraw.
- SRM Channel 'A' indication increases to $2x10^5$cps.

Assume no operator actions are performed.

Which one of the following subsequently describes SRM Channel 'A' indicated reactor power and reactor period?

Indicated reactor power will...

A. decrease and reactor period will remain stable and positive.

B. decrease and reactor period will be negative.

C. continue to increase and reactor period will remain stable and positive.

D. continue to increase and reactor period will become shorter.

ANSWER: B.

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Data Sheets

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	215004.K3.04	
	Importance Rating	3.7	3.7

Proposed Question: See attached Common 027

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The reactor period will be negative because the reactor scrammed.

C&D – With the RPS shorting links removed a scram will occur. Therefore reactor power will decrease and reactor period will be negative.

Technical Reference(s): SOI-C51(SRM); SDM C71; SDM C51(SRM)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-C51 (SRM) OBJ D& E; OT-3036-005-C71 OBJ F

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the reactor response, including SRM indications associated with a stuck detector with the reactor critical in the source range.

Perry Nuclear Power Plant
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QUESTION Common 028

A Main Turbine trip has resulted in an automatic reactor scram.

Twenty (20) seconds later, the following plant parameters are reported:

- The reactor is still operating at 7% power.
- Reactor pressure peaked at 1090 psig and is currently steady at 920 psig.
- Reactor water level decreased to +170 inches and is being maintained at that level.

Which one of the following describes the control signals generated by the Redundant Reactivity Control System at this time?

A. Alternate Rod Insertion and Reactor Recirculation Pump transfer from fast to slow speed.

B. Reactor Recirculation Pump transfer from fast to slow speed and LFMG trip.

C. LFMG trip and Feedwater Runback.

D. Feedwater Runback and Alternate Rod Insertion.

ANSWER: A.

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Data Sheets

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	216000.K1.09	
	Importance Rating	3.7	4.0

Proposed Question: See attached Common 028

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – LFMG trip only occurs if APRMs are not downscale after 25 seconds.

C – LFMG trip and FWRB require APRMs to not be downscale after 25 seconds.

D – FWRB only occurs if APRMs are not downscale after 25 seconds.

Technical Reference(s): SDM-C22	Reference Attached: _X____ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3036-001-C22 OBJ D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the output of the RRCS based on the initial plant conditions provided.

Perry Nuclear Power Plant
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Data Sheets

QUESTION Common 029

RHR Loop 'A' is operating in the Suppression Pool Cooling mode when the operator inadvertently takes the RHR Pump 'A' control switch to STOP.

Which one of the following describes the operational implication of this pump trip?

A. The Feedwater Leakage Control System is inoperable.

B. The LPCS Pump minimum flow protection is affected.

C. The RHR System 'A' high-point piping is potentially voided.

D. The RHR Pump 'A' auto start on a LPCI initiation signal is overridden.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	219000.K1.04	
	Importance Rating	3.9	3.9

Proposed Question: See attached Common 029

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – This is true if the waterleg pump is lost, not the RHR pump.

B – This is true with RHR pump A running, not with the pump shutdown.

D –The RHR pump LOCA override feature is only in effect if a RHR LOCA signal is sealed in when the RHR pump control switch is taken to STOP.

Technical Reference(s): SOI-E12	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E12 OBJ J

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	___X_	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to comprehend the operational implication when an RHR pump trips while operating in the Suppression Pool Cooling mode.

Perry Nuclear Power Plant
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Data Sheets

QUESTION Common 030

A Main Steam Line break inside Containment has resulted in a high Drywell pressure scram.

Eleven (11) minutes later, the following plant conditions exist:

- Reactor pressure is 400 psig and decreasing.
- Reactor water level is +12 inches and steady.
- Drywell pressure is 4 psig and slowly increasing.
- Containment pressure is 6 psig and slowly increasing.

Assume no operator actions have been performed.

Which one of the following describes the operating condition of RHR Loop 'A'?

RHR Loop 'A' is ...

A. spraying Containment.

B. injecting into the rector vessel; the Containment Spray mode can be manually initiated.

C. operating on minimum flow; the Containment Spray mode can be manually initiated.

D. operating on minimum flow; the Containment Sprays mode cannot be manually initiated.

ANSWER: C.

Perry Nuclear Power Plant
NRC Written Examination
Data Sheets

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	1
	K/A#	226001.A4.08	
	Importance Rating	3.2	3.1

Proposed Question: See attached Common 030

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Containment Spray mode will not auto initiate until containment pressure exceeds 8 psig.

B – LPCI injection valve opens at 530 psig but system injection doesn't start until ~280 psig due to the discharge pressure of RHR pumps.

D – RHR containment spray mode can be manually initiated when drywell pressure is above 1.68 psig.

Technical Reference(s): SDM E12	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E12 Objective F

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the current operational status of RHR Loop A based on the plant conditions provided, including whether or not Containment Spray can be manually initiated.

Perry Nuclear Power Plant
NRC Written Examination
Data Sheets

QUESTION Common 031

The following plant conditions exist:

- The reactor scrammed due to closure of the MSIVs.
- Suppression Pool temperature is 131°F.
- Suppression Pool level is 18.0 feet.

Which one of following identifies the maximum allowed reactor pressure without exceeding the Heat Capacity Limit?

PEI-SPI Figure 4 is provided for reference.

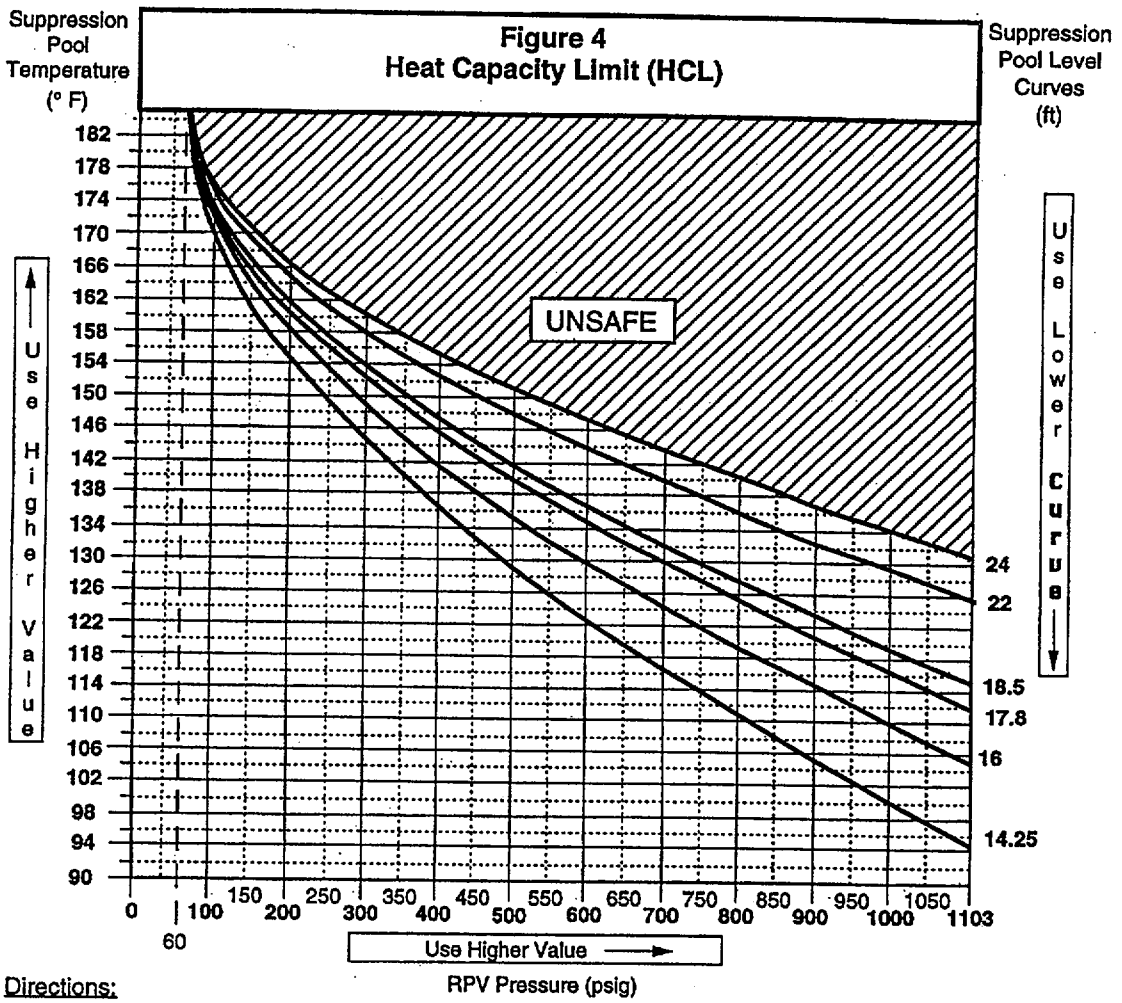
A. 550 psig

B. 600 psig

C. 650 psig

D. 700 psig

ANSWER: C.



Directions:

1.0 **IDENTIFY** RPV Pressure on the horizontal axis of the figure.

2.0 IF the value falls between marked lines on the figure,
THEN USE the higher value.

3.0 **IDENTIFY** Suppression Pool Temperature on the vertical axis of the figure.

4.0 IF the value falls between marked lines on the figure,
THEN USE the higher value.

5.0 **SELECT** the Suppression Pool Level Curve that corresponds to current Suppression Pool level.

6.0 IF Suppression Pool level falls between the marked curves,
THEN USE the next lower curve.

7.0 **IDENTIFY** the point formed by the intersection of the two values with respect to the Suppression Pool Level Curve selected.

8.0 IF the resulting point is above the Suppression Pool Level Curve selected,
THEN HCL is exceeded.

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Data Sheets

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295007.AA2.01	
	Importance Rating	4.1	4.1

Proposed Question: See attached Common 031

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – This is the correct pressure if the 16ft level line is utilized.

B – This is correct for a level between 16ft and 18.5ft level lines.

D – This is the correct pressure if the 18.5ft level line is utilized.

Technical Reference(s): HCL Curve; PEI-SPI Supplement; PEI Bases	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
PEI-SPI Figure 4

Learning Objective (As available): OT-3402-005-04a OBJ F

Question Source:	Bank #	_____
	Modified Bank #	_____ (Note changes or attach parent)
	New	__X___
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__A__
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):
Requires the student to interpret the HCL graph based on initial plant conditions provided.

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QUESTION Common 032

The following plant conditions exist:

- The plant is shutdown for refueling.
- CORE ALTERATIONS are in progress.
- The Refueling Supervisor reports that a fuel bundle has been loaded into the wrong reactor core location.
- The Control Room operator observes that Source Range count indication on panel H13-P680, for the SRM in that quadrant, has increased and stabilized at a higher value.

Which one of the following describes the operational implication of this event?

Shutdown Margin (SDM) has .....

A. increased; the reactor remains sub-critical.

B. increased; the reactor is super-critical.

C. decreased; the reactor remains sub-critical.

D. decreased; the reactor is super-critical.

ANSWER: C.

Perry Nuclear Power Plant
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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295014.AK1.03	
	Importance Rating	3.7	4.0

Proposed Question: See attached Common 032

Proposed Answer: See attached.

Explanation (Why the distractors are incorrect):

A / B – SDM has decreased (not increased) due to the inadvertent addition of positive reactivity (i.e., placing the fuel bundle in the wrong core location).

D – Based on the SRM counts, the reactor is still sub-critical.

Technical Reference(s): GP Rx Theory Text Chp. 2 Tech Specifications Definitions	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3037-006-05 OBJ A&C; OT-3301-004-02 OBJ 5&9

Question Source:	Bank #	_____
	Modified Bank #	_____ (Note changes or attach parent)
	New	__X__
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__C__
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):
Requires the student to predict the impact on SDM and the resulting status of the reactor core.

Perry Nuclear Power Plant
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QUESTION Common 033

The following plant conditions exist:

- A reactor scram has occurred from 100% power.
- Two control rods did not fully insert.
- PEI-B13, RPV Control (ATWS) has been entered.
- RC&IS is available.
- The SCRAM VALVES pushbutton on panel H13-P680 is not backlit.

Which one of the following methods of control rod insertion would be appropriate for inserting the two control rods based on these plant conditions?

A. Pulling scram fuses.

B. Venting the scram air header.

C. Initiating single control rod scrams.

D. Inserting control rods manually using the RC&IS System.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295015.AA1.04	
	Importance Rating	3.4	3.7

Proposed Question: See attached Common 033

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A– Pulling scram fuses would not cause the rod to insert since the individual scram valves are already open.

B – Venting the scram air header opens the scram valves. These valves are already open as indicated by the scram valves pushbutton not backlighting red.

C – Initiating a single rod scram would not cause the rod to insert since the individual scram valves are already open.

Technical Reference(s): PEI-SPI-1.3; SDM-C11(RCIS)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-007-16 OBJ A; OT-3036-004-C11(RCIS) OBJ D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to analyze the plant conditions provided and predict a course of action to insert the two remaining control rods.

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QUESTION Common 034

The plant was operating at 100% reactor power.

Combustible Gas Mixing Compressor 'A' was operating for its quarterly surveillance when the following simultaneous events occurred due to a valid plant condition:

- All standby ECCS Pumps started.
- The Balance-of-Plant (BOP) isolation valves isolated.
- The Nuclear Closed Cooling System (NCC) isolated.

Assuming reactor water level remained normal, which one of the following additional automatic actions immediately occurred?

A. The MSIVs isolated.

B. The reactor scrammed.

C. The Main Turbine tripped.

D. The RCIC System initiated.

ANSWER: B.

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NRC Written Examination
Data Sheets

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295024.EK2.05	
	Importance Rating	3.9	4.0

Proposed Question: See attached Common 034

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The MSIVs do not isolate on high DW pressure.

C – The Main Turbine does not trip on high DW pressure.

D – RCIC does not initiate on high DW pressure (this is a common misconception).

Technical Reference(s): SDM-C71, SDM-M51	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-C71 OBJ F, OT-3036-005-M51 OBJ E

Question Source:	Bank #	__X___
	Modified Bank #	_____ (Note changes or attach parent)
	New	_____
Question History:	Previous NRC Exam	___X___ (June 2001 Exam)
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__C___
10 CFR Part 55 Content:	55.41	__X___
	55.43	_____

Comments (Why is it an upper level question): Requires the student to recognize the common relationship between each of the individual events (i.e., what will automatically cause each event to occur) in order to determine that a reactor scram should also occur due to high DW pressure. The high DW pressure could theoretically occur due to extended operation of the CGMS compressor.

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QUESTION Common 035

A loss of Main Condenser vacuum caused a MSIV isolation and automatic reactor scram.

All control rods fully inserted.

The operator observes the following during a review of the reactor pressure trend data:

- Reactor pressure increased to 1105 psig.
- Reactor pressure then decreased to 915 psig.
- Reactor pressure then cycled between 915 psig and 1040 psig.

Which one of the following describes the current method of reactor pressure control, including the bases for this method?

Reactor pressure is being controlled by the...

A. Low-Low Set SRV(s) to reduce the number of valves cycling thus prolonging valve life.

B. Low-Low Set SRV(s) to allow the RPS system to be reset following a high reactor pressure scram.

C. Main Turbine Bypass Valve(s) to minimize the loss of reactor coolant inventory through the SRVs.

D. Main Turbine Bypass Valves to minimize the heat addition to the Suppression Pool through the SRVs.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295025.EK3.09	
	Importance Rating	3.7	3.7

Proposed Question: See attached Common 035

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – the bases for the LLS setpoints have no relation to the RPS high reactor pressure scram setpoint.

C&D – bypass valves would control pressure based on its pressure setpoint if bypass valve were available. (No SRVs would open be required to cycle).

Technical Reference(s): SDM B21/N11	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-B21/N11 OBJ E

Question Source:	Bank # _____
	Modified Bank # _____ (Note changes or attach parent)
	New ___X__

Question History:	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis ___C___

10 CFR Part 55 Content:	55.41 __X__
	55.43 _____

Comments (Why is it an upper level question):
Requires the student to predict the current method of reactor pressure control based on initial plant conditions, including the bases for this method.

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QUESTION Common 036

A Loss of Coolant Accident has occurred and RPV water level has decreased to –100 inches.

Which one of the following describes the operation of the Emergency Core Cooling Systems (ECCS) at this time?

A. The RHR System (LPCI mode) is 'spraying' water over the top of the reactor core to prevent excessive cladding temperatures.

B. The RHR System (LPCI mode) is 'flooding' the reactor core with water and maintaining core submergence.

C. The HPCS System is 'spraying' water over the top of the reactor core to prevent excessive cladding temperatures.

D. The HPCS System is 'flooding' the reactor core with water and maintaining core submergence.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	295031.EK3.03	
	Importance Rating	4.1	4.4

Proposed Question: See attached Common 036

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The RHR System (LPCI mode) 'floods' the core to achieve core submergence.

B – The RHR System (LPCI mode) is not maintaining core submergence at this time because water level is below the top of active fuel.

D – The HPCS System is not a 'flooding' system, it is a 'spray' system.

Technical Reference(s): SDM E22A	Reference Attached: __X____ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E22A OBJ A&B

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 037

Following entry into PEI-N11, Containment Leakage Control, due to high temperature in the RWCU Pump Room, the room temperature exceeds its Maximum Safe Operating Value.

Which one of the following describes the operational implication of exceeding the Maximum Safe Operating Value in the RWCU Pump Room?

A. Personnel access necessary for the safe operation of the plant will be restricted.

B. Equipment necessary for the safe shutdown of the plant may fail to operate as required.

C. Installed pump room cooling units necessary for heat removal will have exceeded their design heat removal capacity.

D. Automatic isolation of the RWCU System due to RWCU Pump Room high temperature may fail to occur.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	3	2
	K/A#	295032.EK2.08	
	Importance Rating	3.8	3.9

Proposed Question: See attached Common 037

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – These rooms do not require personnel entry for equipment operation.

C – There are no installed pump room cooling units for the RWCU Pumps.

D – The RWCU System will have automatically isolated at a room temperature of approximately 132 °F. Therefore, at the MSOV, isolation of the RWCU System will not be an issue.

Technical Reference(s): PEI-N11 Bases	Reference Attached: __X____ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3402-001-17 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

Perry Nuclear Power Plant
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QUESTION Common 038

The following plant conditions exist:

- A reactor startup is in progress.
- Reactor pressure is 50 psig and slowly increasing.
- RCIC PUMP ROOM SUMP LEVEL HIGH alarm occurs on panel H13-P601.
- EMG ROOM TEMP TRBL alarm occurs on panel H13-P680.
- RWCU ISOL PUMP A(B) RM PMP HI alarm occurs on panel H13-P680.

Which one of the following would be the cause of all of the above alarms?

A. RWCU Pump seal failure.

B. RWCU NRHX relief valve leakage.

C. RCIC Pump Suppression Pool suction line leakage.

D. RCIC Steam Shutoff Valve (E51-F045) packing failure.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	3	2
	K/A#	295036.EA2.03	
	Importance Rating	3.4	3.8

Proposed Question: See attached Common 038

Proposed Answer: A – the RWCU pump room is connected to the RCIC room and this high temperature source of water would actuate alarm.

Explanation (Why the distractors are incorrect):

B – This relief is located in containment (not in the auxiliary building).

C – This type of leak would be a water leak and would not create a high temperature in either room.

D – The RCIC steam line is isolated below 60 psig reactor pressure so a leak at this time would not be exposed to reactor pressure.

Technical Reference(s):ARI-H13-P680-07(D6) PEI-N11 Bases; ARI-H13-P680-01(C5); ARI-H13-P601-18(E3)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-001-17 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to comprehend the significance of the alarms and other plant conditions provided in order to determine the event cause.

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QUESTION Common 039

The TBCC Heat Exchanger 'A' has been removed from service and tagged out for tube cleaning. When the Maintenance crew begins to disassemble the heat exchanger, they observe that the inlet isolation valve is leaking past its seat.

The inlet isolation valve is Red tagged in the Closed position as a boundary valve.

Which one of the following describes who may attempt to seat the leaking inlet isolation valve, including the clearance/tagging condition of the valve?

A. Only a "Clearance Holder"; with the Red tag still hanging.

B. Only a "Clearance Holder"; only <u>after</u> the Red tag has been cleared.

C. Only an "Operating Representative"; with the Red tag still hanging.

D. Only an "Operating Representative"; only <u>after</u> the Red tag has been cleared.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	3	3
	Group #	CAT 2	CAT 2
	K/A#	2.2.13	
	Importance Rating	3.6	3.8

Proposed Question: See attached Common 039

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – By definition, a Clearance Holder can only accept a Clearance. The definition does not allow for manipulation of components.

D – This is not considered a valve manipulation per PAP-1401, so removal of the red tag is not mandatory.

Technical Reference(s): PAP-1401	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3039-008-02 OBJ A

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 040

The following plant conditions exist:

- The reactor is operating at 75% power.
- All ECCS Systems are in standby readiness.
- A spurious Division 1 RHR LOCA initiation occurs.
- Reactor water level and Drywell pressure are normal.
- LPCS and RHR Pump 'A' are secured per ONI-E12-1, Inadvertent Initiation of ECCS/RCIC.

The Unit Supervisor directs LPCI 'A' to be restored to standby readiness.

The operator resets the Division 1 RHR LOCA initiation logic by depressing the LPCS & LPCI A SEAL IN RESET pushbutton on panel H13-P601.

Which one of the following describes the valve positions to restore LPCI 'A' to standby readiness?

	LPCI 'A' Injection Valve E12-F042A	**RHR 'A' Heat Exchanger's Bypass Valve E12-F048A**
A.	Close	Close
B.	Close	Open
C.	Open	Close
D.	Open	Open

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	203000.A4.06	
	Importance Rating	3.9	3.9

Proposed Question: See attached Common 040

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The bypass valve is normally open in standby.

C & D – The injection valve is normally closed in standby.

Technical Reference(s): SOI-E12; ONI-E12-1; SDM E12	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3036-004-E12 OBJ B, E&F

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to differentiate between the LPCI injection lineup and the standby readiness lineup in order to determine which valves must be repositioned based on the initial plant conditions provided.

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QUESTION Common 041

The following plant conditions exist:

- A DBA Loss of Coolant Accident has occurred and the RPV is depressurized.
- All control rods are fully inserted.
- LPCS and LPCI are injecting into the reactor vessel at 6,000 gpm each.
- Reactor water level is +20 inches and increasing.

An operator subsequently notes that LPCS System flow and pump amps begin to fluctuate significantly. All LPCI System parameters are steady within their normal indications.

Which one of the following describes the condition of the LPCS Pump, including guidance for continued operation?

The LPCS Pump is...

A. cavitating and may be secured since adequate core cooling exists.

B. cavitating and should not be secured since adequate core cooling does not exist.

C. running out and may be secured since adequate core cooling exists.

D. running out and should not be secured since adequate core cooling does not exist.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	209001.K5.01	
	Importance Rating	2.6	2.7

Proposed Question: See attached Common 041

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – This indicates the pump is cavitating but adequate core cooling does exist since reactor water level is above TAF.

C & D – This condition does not indicate a pump in runout condition. (By design, LPCS has a restricting orifice in the discharge line to prevent pump runout).

Technical Reference(s): PEI Bases Document ; GP Themo Text, Chp 6	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-005-01 OBJ C; OT-3302-004-06 OBJ 33

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to analyze given pump indications to determine if cavitation is occurring and also determine based on knowledge of adequate core cooling whether or not the LPCS pump may be secured.

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QUESTION Common 042

The following plant conditions exist:

- A normal plant shutdown has been performed per IOI-3, Power Changes, and IOI-4, Shutdown.
- Reactor pressure is 920 psig.
- A forced cooldown is commenced.

Which one of the following describes how reactor pressure is initially reduced and then maintained at 250 psig when performing a forced cooldown per IOI-4?

A. The Pressure Setpoint is reduced until the desired reactor pressure of 250 psig is reached. Pressure is then maintained by cycling the Bypass Valve Opening Jack as necessary.

B. The Pressure Setpoint is reduced until the desired reactor pressure of 250 psig is reached. Pressure is then maintained by adjusting the Pressure Setpoint 20 to 25 psig above the desired reactor pressure.

C. The Bypass Valve Opening Jack is used to control the cooldown rate until the desired reactor pressure of 250 psig is reached. Pressure is then maintained by cycling the Bypass Valve Opening Jack as necessary.

D. The Bypass Valve Opening Jack is used to control the cooldown rate until the desired reactor pressure of 250 psig is reached. Pressure is then maintained by matching the Pressure Setpoint to reactor pressure and reducing the Bypass Valve Opening Jack to zero.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	3
	K/A#	239001.A4.09	
	Importance Rating	3.9	3.9

Proposed Question: See attached Common 042

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A, B & C – These methods of pressure control are not in accordance with IOI-4.

Technical Reference(s): IOI-4	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3046-000-09A OBJ A

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 043

Which one of the following describes the manual operation of the Safety Relief Valves?

To manually open a Safety Relief Valve.....

A. at least one actuator solenoid must energize to admit air to the operating cylinder.

B. two actuator solenoids must energize to admit air to the operating cylinder.

C. at least one actuator solenoid must de-energize to vent air from the operating cylinder.

D. two actuator solenoids must de-energize to vent air from the operating cylinder.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	239002.K4.09	
	Importance Rating	3.7	3.6

Proposed Question: See attached Common 043

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – Only one solenoid is required to open an SRV.

C & D – solenoids must energize to open an SRV.

Technical Reference(s): SDM B21/N11	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-B21/N11 OBJ E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 044

The following plant conditions exist:

- The reactor is operating at 95% power.
- SB&PR Channel 'A' is in TEST for troubleshooting (CHK CIRCUIT DISABLE light is On).
- SB&PR Channel 'B' is selected for control of reactor pressure (B IN CONTROL light is On).

Which one of the following describes the response of the Steam Bypass and Pressure Regulating System if SB&PR Channel 'B' fails upscale, including the required operator action to be performed per ONI-C85-2, Pressure Regulator Failure-Open?

A. The Main Turbine Control Valves and Bypass Valves fully open; reduce the Load Limit setpoint until steam flow is compatible with reactor power.

B. The Main Turbine Control Valves and Bypass Valves fully open; reduce the Maximum Combined Flow Limit setpoint until steam flow is compatible with reactor power.

C. Only the Main Turbine Control Valves fully open; reduce the Load Limit setpoint until steam flow is compatible with reactor power.

D. Only the Main Turbine Control Valves fully open; reduce the Maximum Combined Flow Limit setpoint until steam flow is compatible with reactor power.

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	245000.A2.07	
	Importance Rating	3.8	3.9

Proposed Question: See attached Common 044

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The operator is required to use the Max Combine Flow Limit potentiometer (not the Load Limit potentiometer) to control steam flow.

C & D – The Main Turbine Bypass Valves and Turbine Control Valves will fully open (not just the Turbine Control Valves)

Technical Reference(s): ONI C85-2; SDM N32/C85	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-002-N32/C85 OBJ E&N

Question Source:	Bank #	_____
	Modified Bank #	____ (Note changes or attach parent)
	New	__X___
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__C__
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):
Requires the student to predict the impact of a pressure regulator upscale failure on the Turbine Controls and determine the proper action to mitigate the consequences of this failure.

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QUESTION Common 045

The following Hotwell level control lineup exists on panel H13-P870:

- HWL EMG DUMP TO CST CONTROL, 1N21-R012A, is in Manual at 0% output.
- HWL NORM LVL CONTROL DUMP & MAKE UP VALVES, 1N21-R208, is in Auto.
- HWL EMG MAKE UP FM CST CONTROL, 1N21-R137, is in Auto.

CST Normal Supply From Mixed Bed Water Valve, 1N21-F395, fails open on panel H13-P870.

Assume no further operator actions are performed.

Which one of the following describes the initial Hotwell level response, including the expected operation of the Hotwell level control valves, as a result of valve 1N21-F395 failing open?

Hotwell level will initially ....

A. increase due to the excess of Condensate and Feedwater inventory; only the Hotwell normal dump valve will open to restore Hotwell level to normal.

B. increase due to the excess of Condensate and Feedwater inventory; the Hotwell normal and emergency dump valves will open to restore Hotwell level to normal.

C. decrease due to the shortage of Condensate and Feedwater inventory; only the Hotwell normal makeup valve will open to restore Hotwell level to normal.

D. decrease due to the shortage of Condensate and Feedwater inventory; the Hotwell normal and emergency makeup valves will open to restore Hotwell level to normal.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	3
	K/A#	256000.A1.04	
	Importance Rating	2.9	2.9

Proposed Question: See attached Common 045

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – The Emergency Dump valve will not open because its controller is in Manual at 0%.

C & D – Hotwell level initially increases on a down power because for a short time there is an excess of Condensate/FDW inventory.

Technical Reference(s): SDM N21/61	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-N21/N61 OBJ B&D

Question Source:	Bank # _____	
	Modified Bank # _____	(Note changes or attach parent)
	New ___X__	

Question History:	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis __C__

10 CFR Part 55 Content:	55.41 __X__
	55.43 _____

Comments (Why is it an upper level question):
Requires the student to predict the initial change in Hotwell level during a power reduction, including the response of the Hotwell level control valves based on initial plant conditions.

QUESTION SRO 046

Which one of the following describes the Technical Specification Bases which supports placing the RHR System in the Suppression Pool Cooling mode as Suppression Pool average temperature approaches 95°F in MODES 1, 2, and 3?

Maintaining Suppression Pool average temperature < 95°F...

A. allows the maximum Suppression Pool average temperature limit to be increased to 105°F during testing which adds heat to the Suppression Pool.

B. maintains peak Primary Containment pressures and temperatures within maximum allowable values during a Design Basis Accident (DBA).

C. maintains Containment average temperature and relative humidity within established limits during normal plant operations.

D. minimizes ECCS suction strainer and SRV tail pipe quencher thermal stresses during a Design Basis Accident (DBA).

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295013AK2.01	
	Importance Rating		3.7

Proposed Question: See attached SRO 046

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Technical Specifications allow the maximum suppression pool average temperature to be 105°F without requiring suppression pool cooling to be in operation.

C – This action is not based on meeting the containment humidity requirements.

D – This action is not based on reducing thermal stresses on ECCS suction strainers or SRV tailpipe quenchers.

Technical Reference(s): Tech Spec 3.6.2.1 & 3.6.2.3 Bases	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3037-001-10 OBJ A&B

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X__	

Comments (Why is it an upper level question):

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QUESTION Common 047

The following plant conditions exist:

- The reactor is operating at 100% power.
- Nuclear Closed Cooling (NCC) System heat exchangers have experienced fouling.
- NCC Heat Exchanger outlet temperature is 95°F and increasing.

Which one of the following conditions will automatically occur if NCC Heat Exchanger outlet temperature continues to increase?

A. Reactor Water Cleanup System will isolate.

B. Fuel Pool Cooling and Cleanup System will isolate.

C. Reactor Recirculation Pumps will trip.

D. Control Rod Drive Hydraulic Pump will trip.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295018.AK2.01	
	Importance Rating	3.3	3.4

Proposed Question: See attached Common 047

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – FPCC does not have a high temperature isolation however it is cooled by NCC.

C & D – There is no automatic pump trips associated with high NCC temperature.

Technical Reference(s): ONI-P43	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-P43 G& H

Question Source:	Bank #	_____
	Modified Bank #	_____ (Note changes or attach parent)
	New	__X___
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__C__
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):
Requires the student to understand the relationship between high temperature in the NCC system and the impact on system loads, including expected automatic functions.

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QUESTION SRO 048

A small break LOCA in Containment has led to elevated Containment temperatures and pressures.

Which one of the following conditions must be met to manually initiate Containment Sprays in order to lower Containment temperature per the Containment Temperature Control leg of PEI-T23, Containment Control?

Containment average temperature cannot be maintained less than…

A. 330°F and Containment pressure is less than 2.25 psig.

B. 330°F and Containment pressure is greater than 2.25 psig.

C. 185°F and Containment pressure is less than 2.25 psig.

D. 185°F and Containment pressure is greater than 2.25 psig.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295027.EK2.01	
	Importance Rating		3.4

Proposed Question: See attached SRO 048

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A, B & C – To initiate containment sprays for Containment temperature control requires containment temperature determined not to be able to be maintained less than 185°F and Containment pressure greater than 2.25 psig. (330F is the Drywell design temperature limit).

Technical Reference(s): PEI-T23; PEI Bases Document	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3402-004-07 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X__	

Comments (Why is it an upper level question):

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QUESTION Common 049

An Override step in PEI-B13, Emergency Depressurization, directs the operator to open the Inboard MSL Drain Valve (B21-F016) in accordance with PEI-SPI-9.1 when Containment water level is expected to exceed 45 feet.

Which one of the following describes the reason for this action?

Opening the Inboard MSL Drain Valve...

A. ensures the SRV Tail Pipe Level Limit is not exceeded prior to emergency depressurization.

B. ensures as much heat energy as possible is rejected to the Main Condenser to minimize the dynamic loading on Containment.

C. maintains the availability of the MSL drain path for reactor vessel pressure control if required.

D. maintains Containment water level below the SRV solenoids by establishing a drain path from the reactor vessel to the Main Condenser.

ANSWER: C

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295029.EK2.07	
	Importance Rating	3.1	3.2

Proposed Question: See attached Common 049

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The SRV Tail Pipe Limit is 24.5 feet in the suppression pool and will be exceeded.

B – This action does not establish a flowpath to the condenser, it only ensures it will be available for future use.

D – This action does not provide a drain path for maintaining containment water level.

Technical Reference(s): PEI Bases Document	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-005-12 OBJ C; OT-3402-007-16 OBJ H

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 050

CRD Hydraulics Flow Control, 1C11-R600 is in the Manual mode due to a problem with the Auto mode circuitry.

The following CRDH System indications exist on panel H13-P601:

• CRD DIFF PRESS COOLING, 1C11-R603	13.0 psid
• CRD DIFF PRESS DRIVE, 1C11-R602	220 psid
• CRD PRESSURE CHARGING WATER, 1C11-R601	1800 psig
• CRD FLOW TOTAL SYSTEM, 1C11-R606	58 gpm
• CRD FLOW COOLING WATER, 1C11-R605	54 gpm

Which one of the following operator action(s) is required in order to restore the CRDH System parameters to their normal operating values?

A. Throttle closed CRD DRIVE PRESS CONTROL VALVE, 1C11-F003 to increase CRD drive water differential pressure.
Then adjust the CRD HYDRAULICS FLOW CONTROL, 1C11-R600 to decrease cooling water differential pressure.

B. Throttle closed CRD DRIVE PRESS CONTROL VALVE, 1C11-F003 to increase CRD drive water differential pressure.
Then adjust the CRD HYDRAULICS FLOW CONTROL, 1C11-R600 to increase cooling water differential pressure.

C. Throttle open CRD DRIVE PRESS CONTROL VALVE, 1C11-F003 to increase CRD drive water differential pressure.
Then adjust the CRD HYDRAULICS FLOW CONTROL, 1C11-R600 to decrease cooling water differential pressure.

D. Throttle open CRD DRIVE PRESS CONTROL VALVE, 1C11-F003 to increase CRD drive water differential pressure.
Then adjust the CRD HYDRAULICS FLOW CONTROL, 1C11-R600 to increase cooling water differential pressure.

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	3	3
	Group #	CAT 2	CAT 2
	K/A#	2.2.2	
	Importance Rating	4.0	3.5

Proposed Question: See attached Common 050

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Cooling Water D/P would also have to be increased in order to bring it back within band.

C / D – The CRD Drive Pressure Control Valve (F003) has to be throttled closed in order to increase Drive Water D/P back to the normal operating band.

Technical Reference(s): SDM C11(CRDH), SOI-C11(CRDH)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-007-C11(CRDH) OBJ C

Question Source:	Bank #	_B-41_
	Modified Bank #	_____ (Note changes or attach parent)
	New	_____
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__A__
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):
Requires the student to analyze the plant parameters provided and determine the correct CRDH System control manipulations to be performed in order to restore the system parameters to normal.

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QUESTION Common 051

Which one of the following describes the intent of a 'Hold' step while implementing the Plant Emergency Instructions (PEIs)?

A. All flow path steps are continued or maintained until the conditions of the 'Hold' step are met.

B. All flow path steps are suspended until the conditions of the 'Hold' step are met.

C. All previous flow path steps are suspended until the conditions of the 'Hold' step are met.

D. All succeeding flow path steps are suspended until the conditions of the 'Hold' step are met.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	3	3
	Group #	CAT 4	CAT 4
	K/A#	2.4.19	
	Importance Rating	2.7	3.7

Proposed Question: See attached Common 051

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Only previous actions are continued or maintained while waiting for the Hold step conditions to be met.

B – Only subsequent flow path steps are suspended until the conditions of the Hold step are met in order to continue on.

C – Previous flow path steps are continued while waiting for the Hold step conditions to be met.

Technical Reference(s): PEI Bases Document	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-005-01 OBJ B

Question Source:	Bank #	_1420_
	Modified Bank #	_____ (Note changes or attach parent)
	New	_____
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):

QUESTION Common 052

During a full flow test (CST to CST) of the Reactor Core Isolation Cooling (RCIC) System, a problem is encountered and the operator depresses the RCIC MANUAL ISOLATION pushbutton (E51-S23).

Which one of the following describes the response of the RCIC System, if any?

A. The RCIC System continues to operate.

B. The RCIC Turbine Steam Supply Isolation Valve (E51-F045) closes.

C. The RCIC Steam Supply Inboard Isolation Valve (E51-F063) closes.

D. The RCIC Steam Supply Outboard Isolation Valve (E51-F064) closes.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	217000.A4.04	
	Importance Rating	3.6	3.6

Proposed Question: See attached Common 052

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – The F045 valve only closes automatically on high reactor water level (L8).

C- The F063 valve only closes on a Division 2 isolation signal or manually, this pushbutton operates Division 1 isolation logic.

D – The F064 valve does not close since the manual pushbutton isolation is only active if an automatic RCIC initiation signal is present.

Technical Reference(s): SDM E51

Reference Attached: __X___
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3036-003-E51 OBJ D

Question Source:
Bank # __77__
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History:
Previous NRC Exam _____
Previous Quiz / Test __X___

Question Cognitive Level:
Memory or Fundamental Knowledge _____
Comprehension or Analysis __C__

10 CFR Part 55 Content:
55.41 __X__
55.43 _____

Comments (Why is it an upper level question):
Requires the student to predict the RCIC system response to a manually initiated isolation signal with no automatic initiation signal present.

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QUESTION SRO 053

An Override step in the Drywell and Containment Pressure Control leg of PEI-T23, Containment Control, states "Is Containment pressure greater than 15 psig?"

Which one of the following describes the significance of Containment pressure reaching 15 psig?

A. Containment sprays are initiated.

B. Containment vent paths are prepared.

C. Containment venting is commenced.

D. Containment venting is secured.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	223001.A4.06	
	Importance Rating		4.0

Proposed Question: See attached SRO 053

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Containment sprays are initiated when containment pressure exceeds 2.25 psig (not 15 psig).

C – Containment venting is commenced when containment pressure cannot be maintained below PCL (not 15 psig).

D – Containment venting is secured when containment pressure can be controlled below PCL (not greater than 15 psig).

Technical Reference(s): PEI-T23; PEI Bases Document	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-004-09 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X___	

Comments (Why is it an upper level question):

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QUESTION Common 054

Which one of the following HPCS System valves will automatically isolate a Primary Containment penetration due to a high Drywell Pressure or Low Reactor Vessel Water Level condition.

A. The HPCS Pump Minimum Flow Valve, 1E22-F012.

B. The HPCS First Test Return Valve to CST, 1E22-F010.

C. The HPCS Suppression Pool Suction Valve, 1E22-F015.

D. The HPCS Suppression Pool Test Return Valve, 1E22-F023.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	223002.K1.15	
	Importance Rating	3.4	3.4

Proposed Question: See attached Common 054

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A - F012 receives a Close signal based on pump status and flow, not Drywell Pressure or RPV Low Level.

B – F010 does not isolate a Primary Containment Penetration.

C - F015 receives an Open signal under these conditions.

Technical Reference(s): SDM E22A	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3036-004-E22A OBJ E

Question Source:	Bank # _____
	Modified Bank # _____ (Note changes or attach parent)
	New __X___

Question History:	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge __X__
	Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41 __X__
	55.43 _____

Comments (Why is it an upper level question):

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QUESTION Common 055

A plant startup is in progress with reactor power at 10%. The SB&PR System Pressure Setpoint is maintaining reactor pressure. Currently two Main Turbine Bypass Valves are open.

Which one of the following describes the expected response of the Main Turbine Bypass Valves when a failure of the SB&PR System circuitry causes a Main Turbine Bypass Valve high demand signal (>25% position error)?

The Main Turbine Bypass valves will rapidly...

A. open when the fast acting solenoid valves port pressurized hydraulic fluid to the below piston area of the hydraulic actuators.

B. open when the servo valves reposition to bleed off the pressurized hydraulic fluid.

C. close when the fast acting solenoid valves port pressurized hydraulic fluid to the below piston area of the hydraulic actuators.

D. close when the servo valves reposition to bleed off the pressurized hydraulic fluid.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	241000.K3.30	
	Importance Rating	3.0	3.0

Proposed Question: See attached Common 055

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – Energizing the fast acting solenoid causes high-pressure fluid to be directly applied to the operating piston of the bypass valve.

C & D – The turbine bypass valves will open when the fast acting solenoid is energized.

Technical Reference(s): SDM N32/C85	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3036-002-N32/C85 OBJ J

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis __C__
10 CFR Part 55 Content:	55.41 __X__ 55.43 _____

Comments (Why is it an upper level question):
Requires the student to predict the response of the bypass valves due to a specific failure in the SB&PR System (fast acting solenoid valves energized).

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	262002.K4.01	
	Importance Rating	3.1	3.4

Proposed Question: See attached Common 056

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The ATWS UPS static transfer switch will switch to the alternate AC source on an overcurrent condition.

C & D – The loads are not de-energized on an overcurrent condition.

Technical Reference(s): SDM R14/15; ARI-H13-P680-6 (A4)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-002-R14/15 OBJ D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict the response of the ATWS UPS system loads due to an overcurrent condition on the ATWS UPS inverter.

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QUESTION Common 056

An overcurrent condition is sensed on the output of the Division 1 ATWS UPS Inverter.

Which one of the following describes the response of the Division 1 ATWS UPS System loads?

A. Loads remain energized through the Inverter from the backup DC power supply due to the shift of the Static Transfer Switch.

B. Loads remain energized through the Bypass Transformer from the alternate AC power supply due to the shift of the Static Transfer Switch.

C. Loads de-energize and must be manually re-energized through the Inverter from the backup DC power supply.

D. Loads de-energize and must be manually re-energized through the Bypass Transformer from the alternate AC power supply.

ANSWER: B

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QUESTION Common 057

The following plant conditions exist:

- A reactor startup is in progress.
- Reactor pressure is 900 psig and increasing.
- Main Turbine Bypass Valve BPV-1 is 40% open.
- Main Steam Line Isolation Valves (MSIVs) are open.
- A complete loss of the Circulating Water System occurs.
- Condenser vacuum is 10 inches HgA and degrading.

Which one of the following describes the automatic response of the Main Turbine Bypass Valves if Main Condenser vacuum continues to degrade to 30 inches HgA, including the bases for this response?

The Main Turbine Bypass Valves will automatically close at...

A. 20 inches HgA to prevent over pressurizing the Main Condenser.

B. 20 inches HgA to prevent the release of significant amounts of radioactive material.

C. 21.5 inches HgA to prevent over pressurizing the Main Condenser.

D. 21.5 inches HgA to prevent the release of significant amounts of radioactive material.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295002.AK3.04	
	Importance Rating	3.4	3.6

Proposed Question: See attached Common 057

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – The MSIV/Drains closure provides for protection from release of radioactive materials, not the Bypass valve closure.

C & D – The steam bypass valves close at 20 inches HgA; this is the setpoint for MSIV closure signal on low condenser vacuum.

Technical Reference(s): ONI-N62; SDM B21(NS4)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective (As available): OT-3036-003-N62 OBJ I; OT-3036-002-B21(NS4) OBJ G

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to predict when the Main Turbine Bypass Valves automatically close due to lowering main condenser vacuum and the reason for this automatic action.

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QUESTION Common 058

The following plant conditions exist:

- The reactor is operating at 100% power.
- A loss of Nuclear Closed Cooling (NCC) to the Drywell occurs.
- Drywell temperature is 140°F and increasing.

Assume no operator actions are performed.

Which one of the following describes an automatic action that can occur due to the loss of NCC flow to the Drywell?

A. High Drywell pressure scram.

B. Drywell vacuum breakers open.

C. Reactor Recirculation Pumps trip.

D. Standby Drywell Cooling fans start.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295012.AK1.01	
	Importance Rating	3.3	3.5

Proposed Question: See attached Common 058

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – The drywell vacuum breakers open on a low drywell pressure condition, increasing drywell temperature will cause drywell pressure to increase.

C – The Reactor Recirculation pumps do not auto trip on high temperatures (they are secured).

D – The standby drywell cooling fans do not auto start on high temperature (low flow only).

Technical Reference(s): ONI-P43; PEI Bases Document	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-P43 OBJ H; OT-3402-005-02 OBJ B&C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to recognize the relationship between rising drywell temperature and drywell pressure and predict the expected automatic actions for given plant conditions.

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QUESTION Common 059

When defining SHUTDOWN MARGIN (SDM) for a reactor, which one of the following assumptions is made for control rods?

SDM calculations assume…

A. a single control rod of the highest reactivity worth remains fully withdrawn.

B. a symmetrical pair of control rods with equal reactivity worth remain fully withdrawn.

C. all control rods are inserted to or beyond the Maximum Subcritical Bank Withdrawal Position.

D. all control rods are withdrawn in accordance with established rod pattern sequence restraints.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	3	3
	Group #	CAT 2	CAT 2
	K/A#	2.2.34	
	Importance Rating	2.8	3.2

Proposed Question: See attached Common 059

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – SDM calculation is based on a single control rod being fully withdrawn.

C – Perry's Maximum Subcritical Bank Withdrawal Position is 00 and is not part of the SDM calculation.

D – The SDM calculation is not dependent on rod pattern constraints.

Technical Reference(s): Tech Spec Definitions; Tech Spec 3.1.1 Bases; GP Reactor Theory Text, Chp. 2	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3037-006-05 OBJ C; OT-3301-004-02 OBJ 5

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	_X____	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 060

During an emergency condition, Reactor Operator actions that deviate from plant Technical Specifications are needed to protect the health and safety of the public.

In accordance with PAP-0201, Conduct of Operations, these actions require concurrence of ...

A. the NRC.

B. a licensed senior reactor operator.

C. a second licensed reactor operator.

D. the Plant Manager (non-licensed).

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	3	3
	Group #	CAT 4	CAT 4
	K/A#	2.4.12	
	Importance Rating	3.4	3.9

Proposed Question: See attached Common 060

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – NRC concurrence is not required; notification is required if actions are taken.

C – These actions require concurrence of a senior reactor operator licensed individual.

D – Concurrence must be obtained from a licensed SRO.

Technical Reference(s): PAP-0201	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3039-008-02 OBJ A

Question Source:	Bank #	_1216_	
	Modified Bank #	_____	(Note changes or attach parent)
	New	_____	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	___X__	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 061

The following plant conditions exist:

- The reactor is operating at 15% power.
- Reactor water level is being maintained by the MFP on the Startup Level Controller in the Auto mode.
- The MFP Flow Controller (C34-R601C) is in Manual with a 40% output signal.
- The Startup Level Controller (C34-R602) is in Auto with a 53% output signal.
- RFPT 'A' Governor Control is in Manual and speed is at 1100 rpm.
- RFPT 'A' Flow Controller (C34-R601A) is in Auto.

Which one of the following describes the response of the Feedwater Level Control System (C34) if RFPT 'A' Discharge Valve (N27-F100A) is opened?

A. MFP flow decreases.
RFPT 'A' flow remains the same.
Total feedwater flow decreases.

B. MFP flow decreases.
RFPT 'A' flow increases.
Total feedwater flow stabilizes at its original value.

C. MFP flow remains the same.
RFPT 'A' flow increases.
Total feedwater flow increases.

D. MFP flow remains the same.
RFPT 'A' flow remains the same.
Total feedwater flow remains the same.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	259002.A1.02	
	Importance Rating	3.6	3.5

Proposed Question: See attached Common 061

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – RFPT A will not increase flow with its governor in Manual.

C & D – MFP flow will decrease to its controller setting (40%) since it can not swap to MLC with its controller in Manual.

Technical Reference(s): SDM C34; LER 95-007	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3036-006-C34 OBJ C&D

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New ___X__
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis __C__
10 CFR Part 55 Content:	55.41 __X__ 55.43 _____

Comments (Why is it an upper level question):
Requires the student to predict the response of the feedwater system flow based on manipulations of the Feedwater Level Control System controls.

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QUESTION Common 062

The plant is operating at 100% reactor power when a BUS EH11 STRIPPED UNDERVOLTAGE alarm is received on panel H13-P877.

Which one of the following identifies the cause of this alarm, including the action(s), which the operator should verify as a consequence of this alarm?

A. Bus EH11 voltage has decreased to 3.0 KV for greater than three seconds; verify the Division 1 Diesel Generator automatically started and the Diesel Generator output breaker remains open.

B. Bus EH11 voltage has decreased to 3.0 KV for greater than three seconds; verify the Division 1 Diesel Generator automatically started and the Diesel Generator output breaker closes.

C. Bus EH11 voltage has decreased to 3.8 KV for greater than twelve seconds; verify the Division 1 Diesel Generator automatically started and the Diesel Generator output breaker remains open.

D. Bus EH11 voltage has decreased to 3.8 KV for greater than twelve seconds; verify the Division 1 Diesel Generator automatically started and the Diesel Generator output breaker closes.

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	1
	K/A#	262001.G2.4.50	
	Importance Rating	3.3	3.0

Proposed Question: See attached Common 062

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – On an undervoltage condition the output breaker closes (on a LOCA the output breaker remains open).

C & D – This setpoint is for the Bus EH11 degraded voltage alarm (not the stripped undervoltage alarm).

Technical Reference(s): SDM R10; ARI-H13-P877-1 (C1)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-R10 OBJ D&F

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 063

The plant is operating at 75% reactor power. Both Reactor Recirculation Flow Control Valves are 75% open. Reactor Recirculation Flow Control Valve 'A' has locked up due to an analog circuit failure. Subsequently, I&C has made repairs and reset the analog circuit.

After the RCIRC FCV MOTION INHIBIT RESET switch, 1B33A-S112, on panel H13-P680 is placed to the 'A' position, the hydraulic power unit Isolate/Operate Valve subsequently fails in the Isolate position.

Which one of the following describes the response of Reactor Recirculation Flow Control Valve 'A'?

Reactor Recirculation Flow Control Valve 'A' will...

A. not reset.

B. "lock up".

C. fail full open.

D. fail full closed.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	202002.K3.06	
	Importance Rating	3.7	3.7

Proposed Question: See attached Common 063

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The FCV will reset but then will lock up due to a velocity error.

C & D – The FCV will lockup.

Technical Reference(s): SOI-B33	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-B33 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requites the student to predict how a malfunction in the Recirculation Flow Control System will impact the response of the Flow Control Valve.

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QUESTION Common 064

Refueling operations are in progress and the Inclined Fuel Transfer System (IFTS) is in operation.

The IFTS Fuel Handling Building Panel Operator has just raised the IFTS Carriage Assembly to the RAISE FILL/DRAIN STOP position. The Bottom Valve and Drain Valve have closed.

Which one of the following describes the expected impact on the Upper Containment Pool water level?

The Upper Containment Pool water level will initially...

A. decrease when the IFTS Transfer Tube is filled with water; water level must be manually restored with makeup water from the Condensate Transfer and Storage System.

B. decrease when the IFTS Transfer Tube is filled with water; water level is restored when water from the FPCC surge tanks is subsequently pumped back to the Upper Containment Pool.

C. increase due to the displacement of water by the IFTS Carriage Assembly; water level is restored when the IFTS Carriage Assembly is subsequently lowered to the Fuel Handling Building.

D. increase due to the displacement of water by the IFTS Carriage Assembly; water level is automatically restored via an automatic drain valve to the Fuel Storage Pool in the Fuel Handling Building.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	3	2
	K/A#	234000.A1.01	
	Importance Rating	3.1	3.4

Proposed Question: See attached Common 064

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The Upper Containment Pool level is restored via the Fuel Transfer Tube Drain Tank Pump to the FPCC Surge Tanks and then pumped back to the Upper Containment Pool.

C & D – Upper containment pool level will initially decrease as the transfer tube is filled (until the FPCC Upper Pool return can restore pool level).

Technical Reference(s): SDM G41; SDM F42	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-G41 OBJ C; SYS-5014-002-F42 OBJ B

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to comprehend the change in Upper Containment Pool Level when the IFTS Transfer Tube is filled during a "Raise" evolution.

QUESTION Common 065

Feedwater Heater 6A must be removed from service due to a tube leak.

Which one of the following describes the expected plant response when Feedwater Heater 6A is removed from service?

Feedwater temperature entering the reactor will...

A. decrease and cause reactor power to increase.

B. decrease and cause reactor power to decrease.

C. increase and cause reactor power to increase.

D. increase and cause reactor power to decrease.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	2
	K/A#	259001.A1.02	
	Importance Rating	3.2	3.3

Proposed Question: See attached Common 065

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – Reactor power will increase due to an increase in inlet subcooling.

C/D – Feedwater temperature decreases (not increases) due to a loss of feedwater heating.

Technical Reference(s): SDM N36/25/26; ONI-N36; GP Rx Theory Text Chp. 4	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-002-N36/25/26 OBJ F; OT-3301-004-04 OBJ 10&12

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the student to comprehend the impact of isolating a feedwater heater will have on feedwater temperature and reactor power.

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QUESTION Common 066

The plant is operating at 50% reactor power. The AC Electrical Distribution System is in its normal operating lineup and all divisional and non-divisional batteries are being supplied by their normal chargers.

Bus L11 suddenly experiences a bus lockout.

Which one of the following describes the effect, if any, on the divisional and non-divisional DC Systems?

A. No effect; the normal chargers will continue to supply their respective DC loads and batteries.

B. The divisional DC Systems will be unaffected; both non-divisional DC Systems will be supplied by their batteries.

C. The divisional DC Systems will be unaffected; the non-divisional D-1-B DC System will switch to its alternate charger and the non-divisional D-1-A DC System will be supplied by its battery.

D. The divisional DC Systems will be unaffected; the non-divisional D-1-A DC System will switch to its alternate charger and the non-divisional D-1-B DC System will be supplied by its battery.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	295003.AA1.04	
	Importance Rating	3.6	3.7

Proposed Question: See attached Common 066

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B, C & D – Non-divisional battery chargers are normally supplied via Bus L12. Divisional battery chargers are powered from Class 1E AC distribution that is normally aligned to Bus L10.

Technical Reference(s): SDM R42; SDM R10	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-R42 OBJ B; OT-3036-006-R10 OBJ C

Question Source:	Bank #	_1434_
	Modified Bank #	_____ (Note changes or attach parent)
	New	_____
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__C__
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):
Requires the student to predict the impact of a loss of AC Bus L11 on the DC electrical distribution system.

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QUESTION Common 067

Distribution Panel D1A06 of the 125 VDC Non-Class 1E DC System 'A' was inadvertently de-energized due to a clearance error.

Which one of the following DC electrical loads is effected by this event?

A. Control Room annunciators.

B. RCIC Gland Seal Compressor.

C. Emergency Hydrogen Seal Oil Pump.

D. Division 1 Diesel Generator controls.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295004.AA1.01	
	Importance Rating	3.3	3.4

Proposed Question: See attached Common 067

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B & C – This is a D1B load.

D – This is an ED1A load.

Technical Reference(s): ONI R42-4; SDM R42; ONI-R61	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-R42 OBJ B&E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION SRO 068

The following plant conditions exist:

- Containment average temperature is 90°F.
- Containment relative humidity is 18%.

Which one of the following describes the current Containment average temperature versus relative humidity, including the bases for this Technical Specification limit?

Technical Specification Figure B3.6.1.12-1 is provided for reference.

The Containment average temperature versus relative humidity condition is…

A. acceptable; this limit ensures an excessive negative pressure is <u>not</u> exerted on the Containment in the event RHR containment spray initiates during normal plant operation and the Primary Containment is required to be OPERABLE.

B. acceptable; this limit ensures that the peak LOCA Primary Containment temperature does not exceed the maximum allowable design temperature.

C. <u>not</u> acceptable; this limit ensures an excessive negative pressure is <u>not</u> exerted on the Containment in the event RHR containment spray initiates during normal plant operation and the Primary Containment is required to be OPERABLE.

D. <u>not</u> acceptable; this limit ensures that the peak LOCA Primary Containment temperature does not exceed the maximum allowable design temperature.

ANSWER: C

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		2
	K/A#	295011.AA2.03	
	Importance Rating		3.2

Proposed Question: See attached SRO 068

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – Containment average temperature versus relative humidity limit is in the unacceptable region of operation of Technical Specifications Figure B 3.6.1.12-1.

D – This is not the bases for this limit (this is the bases for containment air temperature limit).

Technical Reference(s): Tech Spec 3.6.1.12 Bases & Figure B 3.6.1.12-1	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

Figure B 3.6.1.12-1 with Acceptable and Unacceptable regions notation removed.

Learning Objective (As available): OT-3037-001-10 OBJ A, B&C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X__	

Comments (Why is it an upper level question):
Requires the student to interpret the initial plant conditions and utilizing the graph provided, determine if Containment humidity and temperature is within the limits, including the bases for this limit.

QUESTION Common 069

Which one of the following lists the order of preference for indications to be used when determining Suppression Pool water temperature in accordance with the Plant Emergency Instructions?

Note: Order of preference is defined as most preferred to least preferred.

A. Validated SPDS, highest reading functional instrument, Post Accident recorders.

B. Post Accident recorders, highest reading functional instrument, validated SPDS.

C. Highest reading functional instrument, validated SPDS, Post Accident recorders.

D. Validated SPDS, Post Accident recorders, highest reading functional instrument.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	295026.EA1.03	
	Importance Rating	3.9	3.9

Proposed Question: See attached Common 069

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A / B / C – The order of the three different indications is not in the order from most preferred to least preferred.

'SPDS' is synonymous with 'ERIS'.

Technical Reference(s): PEI-Bases Document	Reference Attached: ___X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-005-01 Obj C

Question Source:	Bank #	__X___	
	Modified Bank #	_____	(Note changes or attach parent)
	New	_____	
Question History:	Previous NRC Exam	__X___	(June 2001 Exam)
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION Common 070

The following plant conditions exist:

- A Loss of Coolant Accident has occurred.
- Hydrogen is present in the Primary Containment.
- PEI-M51/56, Hydrogen Control, has been entered.
- Hydrogen Recombiners have been started.

Which one of the following hydrogen concentrations will require the Hydrogen Recombiners to be secured, including the bases for this action?

The Hydrogen Recombiners are secured at:

A. 4% hydrogen concentration in order to prevent their becoming an ignition source.

B. 4% hydrogen concentration because there is insufficient oxygen available to support the recombination reaction.

C. 6% hydrogen concentration in order to prevent their becoming an ignition source.

D. 6% hydrogen concentration because there is insufficient oxygen available to support the recombination reaction.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A#	500000.EA1.03	
	Importance Rating	3.4	3.2

Proposed Question: See attached Common 070

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – 4% hydrogen concentration is the lower limit of flammability; this value does not require the hydrogen recombiners to be secured.

B – 4%hydrogen concentration is the lower limit of flammability; this value does not require the hydrogen recombiners to be secured. Also there is no bases for 'insufficient oxygen to support the recombination reaction'. Perry does not inert its Containment.

D – There is no bases for 'insufficient oxygen to support the recombination reaction'. Perry does not inert its Containment.

Technical Reference(s): PEI-M51/56, PEI Bases Document, SOI-M51/56	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-006-10 OBJ C; OT-3036-005-M51 OBJ C

Question Source:	Bank #	____
	Modified Bank #	__ (Note changes or attach parent)
	New	_____
Question History:	Previous NRC Exam	__X___ (June 2001 Exam)
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question):

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QUESTION Common 071

RHR Loop 'B' is being placed in the Shutdown Cooling mode in accordance with IOI-11, Shutdown From Outside the Control Room.

Which one of the following describes the operator action required to position RHR B HX'S OUTLET VALVE, 1E12-F003B, for this evolution?

RHR B HX'S OUTLET VALVE, 1E12-F003B, is manipulated using its control switch located at...

A. MCC EF1D07-D without requiring the use of a Transfer and Control Switch on the Division 2 Remote Shutdown Panel.

B. MCC EF1D07-D only after a Transfer and Control Switch is placed in EMERG on the Division 2 Remote Shutdown Panel.

C. the Division 2 Remote Shutdown Panel without requiring the use of a Transfer and Control Switch on the Division 2 Remote Shutdown Panel.

D. the Division 2 Remote Shutdown Panel only after a Transfer and Control Switch is placed in EMERG on the Division 2 Remote Shutdown Panel.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	3	3
	Group #	CAT 1	CAT 1
	K/A#	2.1.30	
	Importance Rating	3.9	3.4

Proposed Question: See attached Common 071

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – This valve does not require operation of the RSP Transfer and Control Switches to be utilized.

C & D – This valve is not controlled from the Div 2 RSP.

Technical Reference(s): IOI-11; SDM C61	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-C61 OBJ B&E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X_	
	55.43	_____	

Comments (Why is it an upper level question):

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QUESTION SRO 072

The following plant conditions exist:

- The reactor scrammed due to closure of the MSIVs.
- PEI-B13, RPV Control (Non-ATWS) has been entered.
- RCIC has been manually started to aid in reactor pressure control.
- CST level is 275,000 gallons.
- Suppression Pool temperature is 105°F.

Subsequent cycling of Safety Relief Valves has caused a high Suppression Pool level signal and the RCIC Pump Suppression Pool Suction Isolation Valve (E51-F031) starts to open.

Which one of the following actions should the Unit Supervisor direct, including the bases for this action?

A. Manually trip the RCIC Turbine to prevent damage due to exceeding lube oil temperature limitations.

B. Manually close the RCIC Pump CST Suction Valve (E51-F010) to prevent draining the CST to the Suppression Pool.

C. Manually close the RCIC First and Second Test Valves to CST (E51-F022 & E51-F059) to prevent pumping the Suppression Pool to the CST.

D. Manually open the RCIC Pump CST Suction Valve (E51-F010) and then close the RCIC Pump Suppression Pool Suction Isolation Valve (E51-F031) to prevent challenges to RCIC NPSH and vortex limitations.

ANSWER: D.

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Data Sheets

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	217000.A2.12	
	Importance Rating		3.0

Proposed Question: See attached SRO 072

Proposed Answer: D – since CST is available this is the preferred source

Explanation (Why the distractors are incorrect):

A – The current suppression pool temperature does not warrant this action; overheating is expected at above 185°F.

B – This valve will auto close when the SP suction is full open. The CST cannot drain to the SP through the SP suction header because of check valves in each suction line.

C – These valves will auto close when the SP suction valve reaches full open.

Technical Reference(s): SDM E51; PEI-B13; PEI Bases	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3402-005-02 OBJ F

Question Source:	Bank # ____
	Modified Bank # _____ (Note changes or attach parent)
	New __X___

Question History:	Previous NRC Exam _____
	Previous Quiz / Test _____

Question Cognitive Level:	Memory or Fundamental Knowledge _____
	Comprehension or Analysis __A__

10 CFR Part 55 Content:	55.41 __X__
	55.43 _____

Comments (Why is it an upper level question):

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QUESTION SRO 073

The plant was operating at 100% reactor power when Main Steam Line 'D' inboard and outboard isolation valves (B21-F022D and B21-F028D) fail closed and the reactor scrammed.

Which one of the following Reactor Protection System (RPS) signals caused the scram?

A. RPV high pressure.

B. MSIV closure.

C. RPV Level 3.

D. RPV Level 8.

ANSWER: A.

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Data Sheets

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295006.AA2.06	
	Importance Rating		3.8

Proposed Question: See attached SRO 073

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – Isolation of a single MSL will not cause a scram (i.e., due to MSIV position being less than 92%).

C – RPV Level 3 occurs after the scram (due to void collapse).

D – RPV Level 8 is a long term post-scram condition.

Technical Reference(s): USAR Section 15.2	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3401-005-12 OBJ A

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question):

QUESTION SRO 074

The following plant conditions exist:

- A reactor cooldown is in progress.
- Reactor pressure is 48 psig.
- Reactor temperature is 275°F.
- RHR Loop 'B' is operating in the Shutdown Cooling mode.
- Based on surveillance results, the standby loop of RHR SDC has just been declared inoperable.

Which one of the following Technical Specification Required Actions must be completed within one hour?

A. Verify an alternate method of decay heat removal is available.

B. Verify one Reactor Recirculation Pump is in operation.

C. Monitor reactor coolant temperature and pressure.

D. Suspend the reactor cooldown.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 1
	K/A#	2.1.11	
	Importance Rating		3.8

Proposed Question: See attached SRO 074

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – This action is not required by Tech Specs (a Recirc pump is part of the LCO).

C – Not required at this time; this is required if both loops of SDC were inoperable and no recirc pumps were in operation.

D – This is not an action specified by Technical Specifications.

Technical Reference(s): Technical Specifications 3.4.9	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3037-006-08 OBJ B&D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):

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QUESTION SRO 075

During a plant startup with the reactor operating at 5% power, the on-shift Chemistry Technician reports the following results from SVI-C41-T1026 pertaining to the Standby Liquid Control System (SLC) Storage Tank:

- SLC TANK NET VOLUME 4600 gallons
- SOLUTION CONCENTRATION WT % BORON 2.75%

Which one of the following describes the condition of the Standby Liquid Control (SLC) System in accordance with Technical Specification LCO 3.1.7, SLC System?

Technical Specification Figure 3.1.7.1 is provided for reference.

A. The SLC System is OPERABLE; no Required Action(s) need to be completed.

B. The SLC System is not required to be OPERABLE; no Required Action(s) need to be completed.

C. Only one SLC subsystem is OPERABLE; Required Action(s) need to be completed.

D. No SLC subsystems are OPERABLE; Required Action(s) need to be completed.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	211000.G2.1.33	
	Importance Rating		4.0

Proposed Question: See attached SRO 075

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The SLC system is INOPERABLE.

B – The SLC system is required to be OPERABLE for this plant condition (and is inoperable).

C – The SLC storage tank is common; therefore both SLC subsystems are inoperable.

Technical Reference(s): Technical Specification 3.1.7 and Bases; SDM C41	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
Technical Specification Figure 3.1.7-1

Learning Objective (As available): OT-3037-006-05 OBJ B; OT-3036-000-C41 OBJ C&H

Question Source:	Bank #	_____
	Modified Bank #	_____ (Note changes or attach parent)
	New	__X___
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	__A__
10 CFR Part 55 Content:	55.41	__X___
	55.43	__X___

Comments (Why is it an upper level question):
Requires the SRO student to analyze initial plant conditions in order to determine SLC system operability.

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QUESTION SRO 076

The plant is operating at 100% reactor power when the following alarms occur on panel H13-P601:

- LPCS AUTO START RECEIVED
- LPCS & LPCI A DW PRESS HIGH
- LPCI A AUTO START RECEIVED
- ADS A PERMISSIVE LPCS / RHR A RUN
- ADS A TIME DELAY LOGIC TIMER RUNNING

An operator reports the following plant parameters:

- Reactor power is 100% and steady.
- Reactor water level is +201 inches and steady.
- Drywell pressure is 0.4 psig and steady.

As the Unit Supervisor, which one of the following instructions should be entered, including an operator action that should be directed in order to mitigate the consequences of this event?

A. Enter ONI-E12-1, Inadvertent Initiation of ECCS/RCIC, and inhibit both ADS Logic Channels.

B. Enter ONI-E12-1, Inadvertent Initiation of ECCS/RCIC, and inhibit only ADS Logic Channel 'A'.

C. Enter PEI B13, RPV Control (Non-ATWS), and inhibit both ADS Logic Channels.

D. Enter PEI B13, RPV Control (Non-ATWS), and inhibit only ADS Logic Channel 'A'.

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	218000 G2.4.4	
	Importance Rating		4.3

Proposed Question: See attached SRO 076

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – ONI-E12-1 directs that only the effected ADS channel be inhibited.

C & D – The entry conditions for PEI B13 have not been met.

Technical Reference(s): ONI-E12-1; SDM B21C(ADS)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E12 OBJ M; OT-3036-002-B21C OBJ E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to analyze given plant conditions, recognize entry into off normal plant procedures and direct the appropriate action.

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QUESTION SRO 077

The following plant conditions exists:

- The plant is operating at 100% reactor power.
- The Class 1E 4.16KV buses are being powered from their Normal Preferred Source.
- Interbus Transformer LH-1-A lockout relay actuates.
- All Diesel Generators start and tie to their respective buses.
- Electrical maintenance is investigating the cause of the LH-1-A lockout.
- All other plant equipment is OPERABLE.

Technical Specifications 3.8.1 and 3.8.7 are provided for reference.

As the Unit Supervisor, which one of the following describes the maximum time allowed by Technical Specifications to restore Interbus Transformer LH-1-A to OPERABLE status before the plant would have to be in MODE 3?

A. 20 hours.

B. 36 hours.

C. 72 hours.

D. 84 hours.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295003.AK2.03	
	Importance Rating		3.9

Proposed Question: See attached SRO 077

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – This is the time if T.S. 3.8.7 is utilized; this specification is not applicable with the Division 1 and 2 buses energized from the DGs.

B – This is the time if no offsite power source is available.

C – This is the time until a shutdown would have to be commenced, not completed.

Technical Reference(s):	Reference Attached: __X___
Tech Spec 3.8.1, SDM R10	(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

Technical Specifications 3.8.1 and 3.8.7.

Learning Objective (As available): OT-3036-006-R10 OBJ K OT-3037-001-12 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to determine the time limitations of Technical Specifications for the AC Electrical Distribution System based on a partial loss of AC power.

QUESTION SRO 078

The following plant conditions exist:

- The reactor scrammed on low reactor water level.
- Control rod 30-31 is at position 48.
- All other control rods are fully inserted.
- The Reactor Mode Switch is in SHUTDOWN.

Which one of the following describes the procedural guidance the Unit Supervisor should follow in order to fully insert control rod 30-31?

The control rod should be fully inserted by...

A. manually initiating Alternate Rod Insertion (ARI) per PEI-B13, RPV Control (Non-ATWS).

B. manually driving the control rod using In-Timer Skip per PEI-SPI 1.3, Manual Rod Insertion.

C. scramming the control rod using the HCU Norm-Test-SRI toggle switches per SOI-C11, Rod Control and Information System.

D. performing the appropriate control rod insertion method per ONI-C71-1, Reactor Scram.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295006.AK1.03	
	Importance Rating		4.0

Proposed Question: See attached SRO 078

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – ARI is not directed by PEI-B13 if the reactor is shutdown under all conditions.

B – Entry into PEI-B13 (ATWS) is not required; therefore, use of the PEI-SPI instructions for control rod insertion is not appropriate.

C – Single control rod scram per SOI-C11 is only used when directed by the control rod movement sheets (ONI-C71-1 guidance takes precedence).

Technical Reference(s): SOI-C11(RCIS); PEI-B13; ONI-C71-1	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-C71 OBJ L; OT-3035-003-01 OBJ A

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X__	

Comments (Why is it an upper level question):
Requires the SRO student to determine the appropriate action and procedural guidance for inserting control rods during abnormal plant conditions.

QUESTION SRO 079

The following plant conditions exist:

- A LOCA has occurred.
- Drywell pressure is 3 psig and increasing.
- Containment pressure is 2 psig and steady.
- Reactor pressure is 800 psig and decreasing.
- Reactor water level is +100 inches and increasing.
- HPCS is the only system injecting into the reactor.
- Suppression Pool temperature is 100°F and increasing.
- Suppression Pool level is 18.0 feet and increasing.

As the Unit Supervisor, which one of the following direction(s), if any, should be given regarding the use of RHR Loop A & B in the Suppression Pool Cooling mode in accordance with PEI-T23, Containment Control?

A. Place both loops in the Suppression Pool Cooling mode.

B. Place a single loop in Suppression Pool Cooling mode and align the other loop for the Containment Spray mode.

C. Neither loop should be utilized for the Suppression Pool Cooling mode since they should be aligned for the LPCI Injection mode.

D. Neither loop should be utilized for the Suppression Pool Cooling mode since they should be aligned for the Containment Spray mode.

ANSWER: A

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295013.AA1.01	
	Importance Rating		3.9

Proposed Question: See attached SRO 079

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B & D – The conditions are not met to use containment sprays (CTMT > 2.25 psig).

C – Adequate core cooling is assured with water level above TAF

Technical Reference(s): PEI Bases Document; PEI-T23	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective (As available): OT-3402-004-06 OBJ C

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis __A__
10 CFR Part 55 Content:	55.41 __X__ 55.43 __X__

Comments (Why is it an upper level question):
Requires the SRO student to determine the required actions for RHR Loop A&B per PEI-T23 based on the initial plant conditions provided.

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QUESTION SRO 080

As the Shift Manager, you are informed that control rod 26-27 is at position 46 when it should be at position 48. A review of past core edits indicates the control rod was mispositioned last shift during the Control Rod Exercise surveillance.

Which one of the following describes the requirement for restoring the control rod to its proper position per FTI-B0002, Control Rod Movements, and the subsequent notification requirement per PAP-0201, Conduct of Operations, when there is no specific Duty Management Representative assigned?

A. The control rod is re-positioned to position 48 expeditiously; notify the Plant Manager.

B. The control rod is re-positioned to position 48 expeditiously; notify the Operations Section Manager.

C. Guidance from the Reactor Engineer is required prior to repositioning the control rod to position 48; notify the Plant Manager.

D. Guidance from the Reactor Engineer is required prior to repositioning the control rod to position 48; notify the Operations Section Manager.

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 1
	K/A#	2.1.14	
	Importance Rating		3.3

Proposed Question: See attached SRO 080

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Mispositioned control rods require verbal notification of the Operations Section Manager.

C & D – A control rod out of position by one notch should be expeditiously restored to its correct position and does not require the guidance of a Reactor Engineer.

Technical Reference(s): PAP-0201; FTI-B0002	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3039-008-02 OBJ A; OT-3039-008-03 OBJ A; OT-3403-001-07b OBJ 5

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge __X__ Comprehension or Analysis _____
10 CFR Part 55 Content:	55.41 __X___ 55.43 __X___

Comments (Why is it an upper level question):

QUESTION SRO 081

As the Unit Supervisor, you are performing a pre-job brief with the Non-Licensed Operator who will be the Lead Test Performer for a Surveillance Test Instruction (SVI).

The Non-Licensed Operator identifies several Prerequisite steps that, if performed in parallel, would expedite completion of the SVI.

Which one of the following correctly describes the procedural guidance for this particular situation involving the performance of Prerequisites steps in parallel?

The Unit Supervisor...

A. can review and then authorize the performance of Prerequisite steps in parallel per PAP-1105, Surveillance Test Control.

B. can review and then authorize the performance of Prerequisite steps in parallel per PAP-0522, Changes to Procedures and Instructions.

C. must obtain the Shift Manager's review and authorization to perform Prerequisite steps in parallel per PAP-1105, Surveillance Test Control.

D. must obtain the Shift Manager's review and authorization to perform Prerequisite steps in parallel per PAP-0522, Change to Procedures and Instructions.

ANSWER: C

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 2
	K/A#	2.2.12	
	Importance Rating		3.4

Proposed Question: See attached SRO 081

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – This is the responsibility of the Shift Manager, not the Unit Supervisor.

B & D – PAP-0522 does not contain guidance for surveillance instruction usage.

Technical Reference(s): PAP-1105; PAP-0528	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3039-008-03 OBJ A; OT-3039-001-04 OBJ A

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):

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QUESTION SRO 082

The plant is in MODE 1 and a Containment purge is scheduled for your shift.

As the Unit Supervisor, which one of the following is an administrative restriction for the Containment Vessel and Drywell Purge System (CVDWP) that you should enforce, when possible?

A. The CVDWP System shall be operated in the Refuel Mode.

B. The Containment purge should be conducted between the hours of 1100 and 1600.

C. The Containment Purge Valves should not be open for greater than 1000 hours in the last 365 days.

D. The 42-inch Containment Purge Supply Outboard Isolation Damper (M14-F040) shall not be opened.

ANSWER: B.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 3
	K/A#	2.3.9	
	Importance Rating		3.4

Proposed Question: See attached SRO 082

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The CVDWP Refuel mode shall not be used during Mode 1.

C – There is no time restriction for operation of the purge valves with ITS.

D – There are no restrictions on the use of the 42 inch purge supply outboard isolation damper with ITS.

Technical Reference(s): SOI-M14	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-003-M14 OBJ G

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):

QUESTION SRO 083

Site accountability has been initiated in accordance with the Emergency Plan. The Operations Foreman is currently inside the RRA.

Which one of the following describes the Operations Foreman's responsibility in order to meet site accountability requirements per EPI-B5, Personnel Accountability/Site Evacuation.

A. Report to the Unit 1 or 2 Control Room and use his key card in the card reader.

B. Remain inside the RRA and use his key card in the nearest card reader.

C. Verbally report his location directly to the Secondary Alarm Station (SAS).

D. Verbally report his location directly to the TSC Security Coordinator.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 4
	K/A#	2.4.39	
	Importance Rating		3.1

Proposed Question: See attached SRO 083

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B - Only the Unit 1 or Unit 2 Control Room card readers will provide accountability information.

C - Only the Shift Manager reports personnel locations to the SAS.

D - This individual is not involved with accountability reports for the Control Room staff.

Technical Reference(s): EPI-B0005	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): EPL-0804-009-01 OBJ B&C;EPL-0823-004-01 OBJ 6

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge __X__ Comprehension or Analysis _____
10 CFR Part 55 Content:	55.41 __X___ 55.43 _____

Comments (Why is it an upper level question):

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QUESTION SRO 084

The plant is in MODE 1 when a loss of DC Bus ED-1-A occurs.

Which one of the following describes the response, if any, of the Annulus Exhaust Gas Treatment System (AEGTS) due to the loss of Bus ED-1-A, including the subsequent Technical Specification OPERABILITY of the system?

A. Both AEGTS trains automatically start; both AEGTS trains are OPERABLE.

B. Both AEGTS trains automatically start; both AEGTS trains are INOPERABLE.

C. Neither AEGTS train automatically starts; only AEGTS Train 'A' is INOPERABLE.

D. Neither AEGTS train automatically starts; only AEGTS Train 'A' is OPERABLE.

ANSWER: C

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	261000.K2.03	
	Importance Rating		2.5

Proposed Question: See attached SRO 084

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A & B – Neither AEGTS train starts (RHR logic is powered from ED-1-A and therefore cannot energize to initiate AEGTS).

D – AEGTS Train 'A' operability is impacted by this loss of power.

Technical Reference(s): Tech Spec 3.6.4.3; SDM M15; SDM R42	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-005-M15 OBJ F&H; OT-3036-006-R42 OBJ B; OT-3037-001-10 OBJ A&B

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to predict the impact of a loss of power on the AEGTS initiation logic and determine the operability of the system.

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QUESTION SRO 085

The plant is operating at 100% reactor power when the following alarms occur on panel H13-P870:

- DC BUS D-1-B UNDERVOLTAGE
- BATTERY 1B DC SYSTEM TROUBLE
- 480V BUS GROUND

The Master Level Controller is currently selected to Reactor Narrow Range Level Channel 'A'.

As the Unit Supervisor, which one of the following action(s) would you direct first based on prioritizing these alarms; including the bases for this action(s)?

A. Shift to the Reserve Charger FD-12-B if a fault exists on the Normal Charger FD-1-B; this is to allow repair actions to be initiated for Normal Charger FD-1-B.

B. Coordinate with the RSE and Maintenance to locate the ground if a ground fault is indicated; this is to prevent bus degradation and potential equipment inoperability.

C. Select Reactor Narrow Range Level Channel 'B' and take manual control of the RFPTs to control reactor water level; this is to prevent a low reactor water level scram.

D. Select Reactor Narrow Range Level Channel 'B' and take manual control of the RFPTs to control reactor water level; this is to prevent a high reactor water level scram.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		2
	K/A#	263000.G2.4.45	
	Importance Rating		3.6

Proposed Question: See attached SRO 085

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A & B – These actions are incorrect based on the priority of the alarms listed in the initial conditions (a reactor scram is imminent if manual control of feedwater is not taken).

C – The reason for taking manual control is incorrect (reactor water level will increase not decrease).

Technical Reference(s): ONI-R42-5	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-006-R42 OBJ D&E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to analyze plant conditions, prioritize alarms, and then select the correct procedure and actions to be performed.

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QUESTION SRO 086

The following plant conditions exists:

- The plant is operating at 10% reactor power.
- Steam Jet Air Ejector (SJAE) 'A' is in operation.
- SJAE A CNDR SUCT ISOL ST FLOW LOW alarm is received on panel H13-P870.

Which one of the following describes the response of the Off-Gas / Condenser Air Removal System, including an action the Unit Supervisor can direct in order to mitigate the consequences of this event?

A. The SJAE 12 Inch and 24 Inch Suction Valves (N62-F170A and F140A) automatically close; shift SJAEs and Preheaters / Recombiners if SJAE 'A' flow cannot be restored to its proper flow rate.

B. The SJAE 12 Inch and 24 Inch Suction Valves (N62-F170A and F140A) automatically close; start the Mechanical Vacuum Pumps (N62-C001A and B) if SJAE 'A' flow cannot be restored to its proper flow rate.

C. The Main Steam to SJAE Supply Valve (N62-F020A) automatically closes; shift SJAEs and Preheaters / Recombiners if SJAE 'A' flow cannot be restored to its proper flow rate.

D. The Main Steam to SJAE Supply Valve (N62-F020A) automatically closes; start the Mechanical Vacuum Pumps (N62-C001A and B) if SJAE 'A' flow cannot be restored to its proper flow rate.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		2
	K/A#	271000.A2.02	
	Importance Rating		3.1

Proposed Question: See attached SRO 086

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – The Mechanical Vacuum Pumps cannot be operated above 5% power.

C & D – The SJAE main steam supply valve does not automatically close on low dilution steam flow.

Technical Reference(s): SOI-N64/62; ARI-H13-P870-7 (F1)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-003-N62 OBJ D&H; OT-3036-003-N64 OBJ F

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the SRO student to predict the impact of a low dilution steam flow condition, including an action that can be performed to mitigate the consequences of this condition.

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QUESTION SRO 087

The following plant conditions exist:

- The plant is in MODE 4.
- RHR Loop 'A' is operating in the Shutdown Cooling mode.
- Reactor Recirculation Pump 'A' is operating in slow speed.
- SHUTDOWN COOLING OTBD SUCT ISOL VLV (E12-F008) closes due to a failed relay in the Division 1 NS4 RHR Isolation logic.
- The isolation signal can not be reset.
- Reactor water temperature is increasing but still within the specified temperature band.

Which one of the following describes the status of the RHR loop(s); including an alternate method of decay heat removal the Unit Supervisor could establish per ONI-E12-2, Loss of Decay Heat Removal?

A. Only RHR Loop 'A' is unavailable for shutdown cooling; RHR Loop 'B' should be placed in the Shutdown Cooling Mode using the LPCI injection return flow path.

B. Only RHR Loop 'A' is unavailable for shutdown cooling; RHR Loop 'B' should be placed in the Shutdown Cooling Mode using the normal shutdown cooling return path.

C. Both RHR loops are unavailable for shutdown cooling; RWCU should be demonstrated as an alternate shutdown cooling method.

D. Both RHR loops are unavailable for shutdown cooling; a second Reactor Recirculation Pump should be started as an alternate shutdown cooling method.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		2
	K/A#	295021.G2.4.9	
	Importance Rating		3.9

Proposed Question: See attached SRO 087

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A & B – Neither loop of RHR would be available since the F008 is a common suction line isolation valve.

D – Starting a second recirc pump is not required and is not an alternate decay heat removal method.

Technical Reference(s): ONI-E12-2	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E12 OBJ M

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis __A__
10 CFR Part 55 Content:	55.41 __X___ 55.43 _____

Comments (Why is it an upper level question):
Requires the SRO student to analyze given plant conditions and determine the proper mitigation strategy per off normal procedures.

QUESTION SRO 088

The plant has experienced a Loss of Coolant Accident due to a complete break of the Recirculation System piping.

Which one of the following describes the effects on the Drywell to Containment Horizontal Vents and Containment pressure?

Drywell pressure will rise to a maximum value, thereby .....

A. clearing the Drywell to Containment Horizontal Vents, releasing steam directly into the Containment and pressurizing Containment to a maximum value.

B. clearing the Drywell to Containment Horizontal Vents and causing a rise in Containment pressure followed by a lowering of Drywell pressure and recovering of the vents.

C. covering the Drywell to Containment Horizontal Vents and preventing a rise in Containment pressure.

D. preventing the uncovering of the Drywell to Containment Horizontal Vents and preventing a rise in Containment pressure.

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295024.EA2.01	
	Importance Rating		4.4

Proposed Question: See attached SRO 088

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A –The steam-air mixture is forced into the SP where the steam is condensed. There is no direct flowpath from the Drywell to the Containment air space which would directly pressurize the Containment due to the design of the Containment/Drywell.

C – The rise in Drywell pressure will cause the vents to become uncovered, not cause the vents to become covered.

D - The rise in Drywell pressure will not prevent the vents from becoming uncovered, it will cause the vents to become uncovered.

Technical Reference(s): AT&AA Text-Containment LOCA, SDM-T23	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3401-005-14 OBJ D, OT-3036-005-T23 OBJ B

Question Source:	Bank #	__X___
	Modified Bank #	_____ (Note changes or attach parent)
	New	_____
Question History:	Previous NRC Exam	__X__ (June 2001 Exam)
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	____
	Comprehension or Analysis	__C__
10 CFR Part 55 Content:	55.41	__X___
	55.43	_____

Comments (Why is it an upper level question):
Requires the students to predict the response of Containment and Drywell pressure during a DBA LOCA.

QUESTION SRO 089

While directing plant operations in accordance with an Off-Normal Instruction (ONI), the Unit Supervisor reaches a Subsequent Action that states "Notify a Reactor Engineer".

Which one of the following conditions completes the description of the action the Unit Supervisor shall take in regards to performance of ONI Subsequent Actions?

The Unit Supervisor may progress to the next Subsequent Action in the ONI...

A. only after the Reactor Engineer has been contacted.

B. only after the Reactor Engineer concurs with any additional ONI actions specified for this situation.

C. at any time since ONI Subsequent Actions are developed logically to normally be performed in any order.

D. at any time since the Unit Supervisor can modify the order of Subsequent Actions as necessary to suit plant conditions.

ANSWER: D

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 4
	K/A#	2.4.11	
	Importance Rating		3.6

Proposed Question: See attached SRO 089

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A & B – Subsequent Action steps can be completed out of sequence as determined by the Unit Supervisor.

C – Subsequent action steps are logically developed and are normally performed in order.

Technical Reference(s): PAP-0528	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3039-001-04 OBJ A

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge __X__ Comprehension or Analysis _____
10 CFR Part 55 Content:	55.41 __X___ 55.43 __X___

Comments (Why is it an upper level question):

QUESTION SRO 090

Which one of the following reactor water level indications is designed to provide the Control Room operators with information required to monitor and assess plant status and behavior following an accident?

A. Narrow Range Level Recorder on panel H13-P680.

B. Wide Range Level Indicator on panel H13-P601.

C. Upset Range Level Recorder on panel H13-P680.

D. Shutdown Range Level Indicator on panel H13-P601.

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 4
	K/A#	2.4.3	
	Importance Rating		3.8

Proposed Question: See attached SRO 090

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A, C & D – These are not designated as Reg. Guide 1.97 instruments.

Technical Reference(s): Tech Spec 3.3.3.1 and Bases; SDM B21(NBPI)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-B21(INST) OBJ C; OT-3037-005-07 OBJ F&G

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to have knowledge of Technical Specifications and plant specific instrumentation that is utilized during accident conditions.

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QUESTION SRO 091

The lowest level emergency classification at which any releases are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline (PAG) exposure levels is a / an ...

A. Unusual Event

B. Alert

C. Site Area Emergency

D. General Emergency

ANSWER: B

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 4
	K/A#	2.4.41	
	Importance Rating		4.1

Proposed Question: See attached SRO 091

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – Radioactive releases are not expected to exceed EPA PAG levels at a UE level.

C & D – Radioactive releases may exceed a small fraction of EPA PAG levels at an ALERT (that is lower than SAE and GE).

Technical Reference(s): Emergency Plan Section 3	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): EPL-0823-001-04 OBJ 2

Question Source:	Bank #	__416_
	Modified Bank #	_____ (Note changes or attach parent)
	New	_____
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__
	Comprehension or Analysis	_____
10 CFR Part 55 Content:	55.41	__X___
	55.43	__X___

Comments (Why is it an upper level question):

QUESTION SRO 092

The plant is in MODE 4.

While operating RHR Loop 'B' in the Shutdown Cooling mode, RHR B Shutdown Cooling Suction Valve (E12-F006B) closes when its valve disc separates from its stem.

RHR B SUCTION PRESS LOW alarm is received on panel H13-P601.

Which one of the following describes the impact on the RHR System, including the appropriate Off-Normal Instruction that the Unit Supervisor would enter in order to mitigate the consequences of this event?

A. RHR Pump 'B' automatically tripped on low suction pressure; entry into ONI-E12-2, Loss of Decay Heat Removal, is required.

B. RHR Pump 'B' automatically tripped on low suction pressure; entry into ONI-B21-4, Isolation Restoration, is required.

C. RHR Pump 'B' must be manually secured; entry into ONI-E12-2, Loss of Decay Heat Removal, is required.

D. RHR Pump 'B' must be manually secured; entry into ONI-B21-4, Isolation Restoration, is required.

ANSWER: C

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		2
	K/A#	205000.A2.02	
	Importance Rating		2.7

Proposed Question: See attached SRO 092

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A & B – Although a low suction pressure will occur, RHR B pump does not trip on low suction pressure (interlock is on valve position).

D – Entry into ONI-B21-4 is not required since this was not an isolation signal that caused closure. (Isolations signal effects the F008 & F009 suction valves).

Technical Reference(s): SDM E12; ONI-E12-2	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E12 OBJ E, F & M

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	_____	

Comments (Why is it an upper level question):
Requires the SRO student to predict the impact that a failure of the RHR suction isolation valve will have on pump operation and select the appropriate procedure to use to mitigate this failure.

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QUESTION SRO 093

The following plant conditions exist:

- An inadvertent Division 3 LOCA initiation signal occurred.
- ONI-E12-1, Inadvertent Initiation of ECCS / RCIC, has been entered.
- The inadvertent Division 3 LOCA initiation signal has been reset.
- The Division 3 Diesel Generator (DG) has been running unloaded for ten minutes.

Which one of the following describes the appropriate action that the Unit Supervisor should direct the operator to perform for the Division 3 DG in order to restore from this event, including the reason for this action?

A. Immediately shutdown the Division 3 DG to Standby Readiness to prevent the accumulation of explosive fumes/vapors inside the crankcase.

B. Immediately shutdown the Division 3 DG to Standby Readiness to minimize carbon buildup in the engine cylinders.

C. Load the Division 3 DG to a minimum of 50% for 1 hour to minimize the accumulation of explosive fumes/vapors inside the crankcase.

D. Load the Division 3 DG to a minimum of 50% for 1 hour to minimize carbon buildup in the engine cylinders.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		2
	Group #		1
	K/A#	264000.A2.03	
	Importance Rating		3.4

Proposed Question: See attached SRO 093

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A&B – Anytime the Div 3 DG is run unloaded for > 2 minutes it shall be loaded prior to shutdown.

C – This is the incorrect reason for loading the diesel generator. This is the reason for allowing the diesel to rest prior to removing covers following a overheating condition.

Technical Reference(s): SOI-E22B	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-004-E22B OBJ H

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X__	

Comments (Why is it an upper level question):
Requires the SRO student to assess the given plant conditions and select the appropriate procedural guidance for the abnormal situation, including the reason for this guidance.

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QUESTION SRO 094

The reactor is operating at 75% power when the following alarms occur on panel H13-P601:

- DRYWELL PRESS A(B) HIGH
- DRYWELL AIR COOLERS DRAIN FLOW HI
- DW UNIDENTIFIED RATE OF CHANGE HIGH

Which one of the following conditions would be the cause of all of these alarms?

A. Recirculation Pump inner seal (only) failure.

B. Upper Drywell Cooler tube leak.

C. Recirculation Pump outer seal (only) failure.

D. RPV Condensing Pot leak.

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295010.AA2.01	
	Importance Rating		3.8

Proposed Question: See attached SRO 094

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A / C – A failure of only the inner or outer seal would be directed to the DW Equipment Drain Sump (and would not cause DW pressure to increase).

B – This would be an NCC leak which is a low-energy water system (and therefore could not cause DW pressure to increase).

Technical Reference(s): ARI-H13-P601-20 (E3), ARI-H13-P601-18 (C1 & F1).	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-003-E31 OBJ C

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New ___X__
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge __X__ Comprehension or Analysis _____
10 CFR Part 55 Content:	55.41 __X__ 55.43 _____

Comments (Why is it an upper level question):

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QUESTION SRO 095

The following plant conditions exist:

- The plant is in MODE 4.
- IOI-9, Refueling has been entered.
- Preparations are being made to begin RPV disassembly.
- Upper Containment Pool water levels are normal.
- A major failure of the Suppression Pool structure has occurred.
- PEI-T23, Containment Control has been entered.
- Suppression Pool level is 16 feet and decreasing.

As the Unit Supervisor, which one of the following actions, if any, should you direct regarding the use of the Suppression Pool Makeup System (SPMU)?

A. No action is required; the SPMU System cannot be utilized during refueling operations per IOI-9, Refueling.

B. No action is required; the SPMU System will automatically initiate in thirty minutes if Suppression Pool level is not restored.

C. Manually initiate SPMU System per PEI-SPI 3.2, SPMU Initiation.

D. Manually inhibit SPMU System per SOI-G43, Suppression Pool Makeup System.

ANSWER: C

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295030.EK2.06	
	Importance Rating		3.9

Proposed Question: See attached SRO 095

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – SPMU is placed in OFF during refueling activities, but the PEI still allows manual initiation.

B – SPMU will not automatically initiate; it is in OFF during refueling activities and no LOCA signal is present.

D – This condition requires SPMU to be initiated per the PEIs, not to inhibit the initiation.

Technical Reference(s): PEI-SPI 3.2; PEI-T23; SDM G43	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-003-G43 OBJ D; OT-3042-005-05 OBJ C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to determine the corrective action for SPMU during outage activities and a low suppression pool water level condition occurs.

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QUESTION SRO 096

PEI-N11, Containment Leakage Control, has been entered.

The following HVAC Exhaust Radiation readings exist:

- IB Ventilation Gas is 30,000 cpm.
- AX Ventilation Gas is 8,000 cpm.
- Annulus Exhaust Gas is 200 cpm.
- FHB Vent Exhaust Gas is 900 cpm.

As the Unit Supervisor, which one of the following actions should you direct regarding the operation of the respective HVAC systems in accordance with PEI-N11, Containment Leakage Control?

PEI-N11 is provided for reference.

Verify the supply fans are tripped for...

A. <u>only</u> the IB Ventilation and FHB Ventilation Systems.

B. <u>only</u> the Annulus Exhaust and IB Ventilation Systems.

C. <u>only</u> the FHB Ventilation and AX Ventilation Systems.

D. IB Ventilation, AX Ventilation, Annulus Exhaust and FHB Ventilation Systems.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		2
	K/A#	295034.EA1.02	
	Importance Rating		4.0

Proposed Question: See attached SRO 096

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – AEGTS is not an affected system.

C – The AX System is not an affected system.

D – Only affected ventilation systems supply fans are secured (IB & FHB).

Technical Reference(s): PEI-N11; PEI Bases Document	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:
PEI-N11

Learning Objective (As available): OT-3402-001-17 OBJ D

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis __A__
10 CFR Part 55 Content:	55.41 __X__ 55.43 __X__

Comments (Why is it an upper level question):
Requires the SRO student to analyze plant conditions and determine the applicable supply fan lineup based on given conditions and PEIs.

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QUESTION SRO 097

The following plant conditions exist:

- The reactor is operating at 3% power.
- Both Mechanical Vacuum Pumps are in service.
- MAIN STEAM LINE RADIATION HIGH alarm is received on panel H13-P601.
- Main Steam Line (MSL) Radiation Monitor Channel 'A' UPSCALE TRIP light is energized.
- All other MSL Radiation Monitor radiation levels are increasing but are below their Upscale Trip setpoints.

As the Unit Supervisor, which one of the following actions should be directed regarding the operational status of the Mechanical Vacuum Pumps, including the bases for this action?

A. Verify both Mechanical Vacuum Pumps have automatically tripped; this will reduce any off-site radiation release.

B. Verify both Mechanical Vacuum Pumps have automatically tripped; this will minimize the hydrogen explosion hazard internal to the Condenser Air Removal System.

C. Verify Mechanical Vacuum Pump 'A' has automatically tripped and manually shutdown Mechanical Vacuum Pump 'B'; this will reduce any off-site radiation release.

D. Verify Mechanical Vacuum Pump 'A' has automatically tripped and manually shutdown Mechanical Vacuum Pump 'B'; this will minimize the hydrogen explosion hazard internal to the Condenser Air Removal System.

ANSWER: A.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		1
	K/A#	295038.EK2.10	
	Importance Rating		3.4

Proposed Question: See attached SRO097

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

B – The reason for the MVPs trip on MSL radiation is to contain any potential fission products released due to a fuel element failure which would minimize the offsite release rates.

C / D – Both MVPs trip on Channel "A" MSL radiation upscale.

Technical Reference(s): SDM N62; SDM D17A; SDM B21(NS4)	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective (As available): OT-3036-003-N62 OBJ D; OT-3036-004-D17A OBJ D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__C__	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to determine the correct action to direct based on Main Steam Line elevated radiation levels, including potential radiation hazards associated with this condition (release rates).

QUESTION SRO 098

The following plant conditions exist:

- The plant is operating at 100% reactor power.
- Division 1 and 2 Diesel Generators are OPERABLE.
- Division 3 Diesel Generator is in a secured status for quarterly schedule maintenance.
- One of the smoke detectors in the Unit 1 Division 2 Diesel Generator Room has been declared inoperable.

PAP-1914 Attachments 4 and 6 are provided for reference.

Which one of the following describes the operability requirements for this smoke detector, including, if any, a required action that the Unit Supervisor should implement in accordance with PAP-1914, Fire Protection System Operability?

A. The fire detector is not required to be OPERABLE; no action is required.

B. The fire detector is required to be OPERABLE; remotely monitor the Diesel Generator room temperature from the Control Room hourly.

C. The fire detector is required to be OPERABLE; establish an hourly fire patrol within one hour.

D. The fire detector is required to be OPERABLE; establish a continuous fire watch within one hour.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		2
	K/A#	600000.AA2.15	
	Importance Rating		3.5

Proposed Question: See attached SRO 098

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – The fire detector is required to be OPERABLE since the Division 2 Diesel Generator is required to be OPERABLE.

B – This action is only specified if the instruments are located in the Containment Building.

D – A continuous fire watch is not required for this condition.

Technical Reference(s): PAP-1914	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

PAP-1914 Attachment 4 and 6 applicable pages.

Learning Objective (As available): OT-3039-008-03 OBJ E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	___X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to analyze plant conditions to determine operability of the fire detection system including the requirement to establish a fire watch.

QUESTION SRO 099

The following plant conditions exist:

- CORE ALTERATIONS are in progress.
- The next fuel bundle move is designated for reactor cavity position 09-42.
- The fuel bundle is currently in the Containment Fuel Pool Storage area.
- Source Range Monitor (SRM) Channel 'A' fails and is declared inoperable.
- All other SRMs are OPERABLE.

A reactor core map is provided for reference.

As the Refueling Supervisor, which one of the following actions regarding the next fuel bundle move should you perform, including the bases for this action?

A. Continue the fuel bundle move; it can be completed since the SRM in the affected core quadrant is OPERABLE.

B. Continue the fuel bundle move; it can be completed since the SRM in the adjacent core quadrant is OPERABLE.

C. Suspend the fuel bundle move; it cannot be completed since the SRM in the affected core quadrant is inoperable.

D. Suspend the fuel bundle move; it cannot be completed since the SRM in the adjacent core quadrant is inoperable.

ANSWER: C.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 3
	K/A#	2.2.29	
	Importance Rating		3.8

Proposed Question: See attached SRO 099

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A & C – Technical Specifications require the SRM in the quadrant where the fuel is being loaded to be OPERABLE in order to allow core alterations.

D – SRM A is in the affected quadrant.

Technical Reference(s): Tech Spec 3.3.1.2 and Bases	Reference Attached: __X___ (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

PNPP Form No. 7133

Learning Objective (As available): OT-3037-005-07 OBJ F&H

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	__A__	
10 CFR Part 55 Content:	55.41	__X___	
	55.43	__X___	

Comments (Why is it an upper level question):
Requires the SRO student to determine if fuel movement may proceed based on initial plant conditions, including the bases for this decision.

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QUESTION SRO 100

The following plant conditions exist:

- A Site Area Emergency has been declared.
- You are the Shift Manager and Emergency Coordinator.
- The TSC is still in the 'activation' process.
- You have waived a plant worker's Federal 10CFR20 TEDE dose limit in order to perform a lifesaving activity in an emergency situation.

Which one of the following is the recommended maximum emergency TEDE dose you can authorize the plant worker to receive in accordance with HPI-B0003, Processing of Personnel Dosimetry?

A. 5 Rem

B. 10 Rem

C. 20 Rem

D. 25 Rem

ANSWER: D.

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Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		CAT 3
	K/A#	2.3.1	
	Importance Rating		3.0

Proposed Question: See attached SRO 100

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – 5 Rem is the dose limit for 'emergency services' per HPI-B0003.

B – 10 Rem is the dose limit for 'valuable property' per HPI-B0003.

C – There is no bases for 20 Rem for increased dose limits for workers performing emergency services in HPI-B0003

Technical Reference(s): HPI-B0003

Reference Attached: __X___
(Attach if not previously provided)

Proposed references to be provided to applicants during examination:
NONE

Learning Objective (As available): OT-3039-007-01 OBJ A&B

Question Source:
Bank # __X__
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History:
Previous NRC Exam __X___ (June 2001 Exam)
Previous Quiz / Test _____

Question Cognitive Level:
Memory or Fundamental Knowledge __X__
Comprehension or Analysis _____

10 CFR Part 55 Content:
55.41 __X___
55.43 __X___

Comments (Why is it an upper level question):