

PROPOSED NRC-DEVELOPED WRITTEN EXAMINATION

WITH FACILITY AND NRC COMMENTS

FOR THE PRAIRIE ISLAND INITIAL EXAMINATION - AUGUST 2002

Proposed Written Exam.

- separated into RO & SRO portions of exams.
- NRC & Facility comments included - during validation with licensees.

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 034000A1.02 [2.9, 3.7]

*QUESTION

At which refueling cavity level shall fuel movement in the reactor vessel FIRST be suspended?

- A. ~~Below 753' 6"~~
B. ~~Below 752' 6"~~
C. ~~Below 751' 6"~~
D. ~~Below 750' 6"~~

*ANSWER B

*REFERENCE D5.2, "Reactor Refueling Operations", Precaution 3.1.10

Direct/New/Modified: **New**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

These are all
320 questions
with & w/o comments

Concerned changes incorporated
Question 64

Do not move
this
if not
correct
room?
may be
question

754' ↓

At what max lvl must
fuel movement be suspended?

Why?
FIRST!

*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000059 **AK2.02** [2.7, 2.7]



*QUESTION

An accidental liquid radwaste release in the Radwaste Building results in a RAD WASTE BLDG VENT MONITOR (R-35) ALARM.

What does this alarm indicate?

- A. High gaseous activity, that requires a manual isolation of the Radwaste Building ventilation system
- B. High particulate activity, that results in an automatic isolation of the Radwaste Building ventilation system
- C. High gaseous activity, that results in an automatic isolation of the Radwaste Building ventilation system
- D. High particulate activity, that requires a manual isolation of the Radwaste Building ventilation system

*ANSWER A

*REFERENCE Lesson Plan P8182L-002, pages 8,16,17.
C47048, Radwaste Bldg Vent Monitor, Rev. 23.

Direct/New/Modified: **New**
Tier/Group: 1/1
Level of Difficulty (1 - 5): **3**
Memory/Comprehension-Analysis: **Memory**

*QNUM
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*ANUM
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*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000011 EA2.06 [3.7, 4.0]

OK - w/ format

Concurred
Comments incorporated
Question 66

*QUESTION

The reactor has been tripped and SI was manually initiated due to decreasing pressure from an RCS leak.

- Containment pressure is 4.5 psig.
- RCS pressure is 1900 psig.
- RCS Subcooling is 32 degrees.
- Pressurizer level is 35%
- All SI equipment has actuated.
- The "Reactor Gap Cooling Lo Flow" Annunciator has alarmed

Given the following conditions:
- Reactor trip
- SI manually initiated in response to an RCS leak

WHICH ONE (1) of the following, describes the actions the operating crew would take in regard to the containment air handling system for the above conditions?

- A. Start a second gap cooling fan
- B. Shift two CFCU's to fast speed
- C. Align CFCU discharge dampers
- D. Take no action

*ANSWER D

*REFERENCE Lesson Plan P8180L-009H
Alarm Response Procedure C47021, Rev. 18
Technical Specification Bases 3.3

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
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*QCHANGED FALSE
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*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR
*QVAL
*SEC
*SUBSORT

*KA E01 EK2.2 [3.5, 3.8]

*QUESTION *Given the following conditions:*

- ~~The~~ Reactor was manually tripped, from 100%.
 - Pressurizer level is decreasing as expected commensurate with the cooldown rate.
 - NO safety injection has occurred
 - Tave is than 550° F and decreasing
 - Annunciator 47011-0401, "11 STM GEN HI WATER LVL TURBINE TRIP," is alarming
 - Annunciator 47011-0603, "11 FEEDWATER ISOLATION TRIP," is alarming
 - 11 S/G level is ~~increasing~~ *70% and increasing.*
 - 12 S/G level is ~~greater than 15% and steady~~
 - ~~1R15 is NOT alarming and the radiation level is steady.~~ *No radiation monitor alarms have actuated.*
 - FI-26600, 11FW PMP DISCH FI indicates flow
 - CV-31874, 11FW PUMP RECIRC VLV indicates closed
 - ~~Step 11.b of 1E-0, "Reactor Trip or Safety Injection," is in progress with immediate actions complete.~~
- What is the required course of action?

- A. ~~Remain in 1E-0, "Reactor Trip or Safety Injection,"~~ manually close the 11 S/G feedwater regulating and bypass valves and throttle AFW flow to maintain 11S/G level.
- B. Transition to 1ES-0.1, "Reactor Trip Recovery," *Wait for EOP guidance on controlling Fw* manually close the 11 S/G feedwater flow to each regulating and bypass valves and throttle AFW flow to maintain 11 ~~E/G level~~ *SG level*
- C. ~~Remain in E-0. 11 S/G will be isolated within E-0 guidance.~~ *Manually isolate 11 S/G and 12 S/G level controlled*
- D. ~~Transition to 1E-1, "Loss of Reactor or Secondary Coolant," and isolate the 11 S/G.~~ *Manually isolate 11 S/G and 12 S/G level controlled*
- ~~Transition to 1E-2, "Steam Generator Tube Rupture," and isolate the 11 S/G.~~ *Transition to 1ES-0.1, "Reactor Trip Recovery." Use alarm response procedure guidance to isolate feedwater flow to 11 SG.*

*ANSWER

B

*REFERENCE

1E0, "Reactor Trip or Safety Injection," Rev. 19, Step 4.
1ES-0.1, Reactor Trip Recovery, Rev. 17, Steps 6.b. and 11.b.
Annunciator 47011-0401, "11 STM GEN HI WATER LVL TURBINE TRIP,"
Annunciator 47011-0603, "11 FEEDWATER ISOLATION TRIP," is alarming
Lesson Plans P8180-007 and P8182-002

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

CONCURREN

COMMENTS INCORPORATED

Question 67

Circled changes only

*QNUM
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*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Valos
*QVAL
*SEC
*SUBSORT
*KA W/E09&10 G 2.4.7 [3.1, 3.8]

*QUESTION

A loss of offsite power has occurred and the crew is preparing to cooldown the plant in accordance with ES-0.3A, NATURAL CIRCULATION COOLDOWN WITH CRDM FANS. ~~Then~~
One of the CRDM Fans trip and can NOT be restarted.

Two running
How does having only one CRDM Fan impact natural circulation cooldown?
~~A transition will be made to~~ Cooldown the plant per :

- A. ES-0.3B, NATURAL CIRCULATION COOLDOWN WITHOUT CRDM FANS.
- B. ES-0.4, NATURAL CIRCULATION COOLDOWN WITH STEAM VOID IN VESSEL.
- C. ES-0.3A, NATURAL CIRCULATION COOLDOWN WITH CRDM FANS, but with RCS subcooling maintained at greater than 80 deg F.

- D. ES-0.3A, NATURAL CIRCULATION COOLDOWN WITH CRDM FANS, ~~and with engineering staff concurrence~~ *as the procedure only requires one operating CRDM fan.*
~~cooldown will proceed in the same manner as if two CRDM Fans are running.~~ *with the cooldown rate restricted to 10 deg F/hr.*

*ANSWER A

*REFERENCE ES-0.3A, NATURAL CIRCULATION COOLDOWN WITH CRDM FANS, step 5 and Background Information for step 5.
ES-0.3B, NATURAL CIRCULATION COOLDOWN WITHOUT CRDM FANS, second Note before step 1.

Direct/New/Modified: **Modified**

Tier/Group: 1/1

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

(unclear)
Questions incorporated
Question 68

W/E09&10

*QNUM
*HNUM
*ANUM
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*ACHANGED FALSE
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*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000029 EK3.12 [4.4, 4.7]



Resolved no
comments
Question 69

*QUESTION ~~FR-S.1, RESPONSE TO NUCLEAR POWER GENERATION/ATWS is entered following~~
~~After a trip of both main feed pumps the Reactor Protection System received a low-low steam generator level reactor trip signal. Narrow range steam generator levels are less than 5%. An operator reports that not all rods have inserted and that reactor power is greater than 5%. The control rods that have not inserted into the core are not responding to attempts at manual insertion. The AFW pumps have been verified running and a normal boration has begun.~~

What is the ^{minimum} ~~desired~~ AFW flow rate and the basis for that feed rate in accordance with 1FR-S.1?

- A. Greater than 200 gpm, which is an acceptable rate to remove heat generated from power operation prior to reactor shutdown.
- B. Greater than 200 gpm, which is equivalent to the discharge flow of one motor driven auxiliary feedwater pump at normal steam generator operating pressure.
- C. Greater than 400 gpm, which is an acceptable rate to remove heat generated from power operation prior to reactor shutdown.
- D. Greater than 400 gpm, which is equivalent to the discharge flow of one motor driven auxiliary feedwater pump at normal steam generator operating pressure.

*ANSWER C

*REFERENCE 1FR-S.1, Response To Nuclear Power Generation/ATWS, Rev. 11
Lesson Plan P8197L-014

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): 4

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM

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 *ANUM
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 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL S
 *EXMNR Valos
 *QVAL
 *SEC
 *SUBSORT
 *KA W/E08 EA2.1 [3.4, 4.2]

OK as written

H RCS is 100% flow. expect lots of RHR flow.

*Resolved
no comments
question 20*

*QUESTION

The following plant conditions are present:

- A LOCA occurred 30 minutes ago on Unit 1 From 100% power
- RCS pressure is 100 psig *is not available*
- Containment pressure is 12 psig
- Core Exit ~~TS~~ are at 380 deg F
- RCS cold leg temperatures have decreased to 240 deg F
- 11 SI Pump is running with flow indicated
- 11 RHR pump is running with ~~injection~~ flow indicated
- ~~RWST level is at 80%~~ *Completed E-8 and are now*
- Operators ~~are~~ performing actions in E-1, LOSS OF REACTOR OR SECONDARY COOLANT
- *A RED patch is noted on the INTEGRITY CSF. The RWST LO LVL alarm ~~is~~ as in with RWST level at 33%.*

Which of the following describes the appropriate actions to be taken?

- A. Go to FR-P.1, RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION, but then immediately return to E-1 with no action taken.
- B. Go to ECA-1.1, LOSS OF EMERGENCY COOLANT RECIRCULATION *and perform actions to conserve RWST inventory.*
- C. Go to FR-P.1, RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION, ~~and~~ depressurize the RCS until RHR injection flow is established.
- D. Go to ES-1.2, TRANSFER TO RECIRCULATION *and establish Hi Head Recirculation flow*

*ANSWER A

*REFERENCE FR-P.1, RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION, step 1

Direct/New/Modified: **Modified**

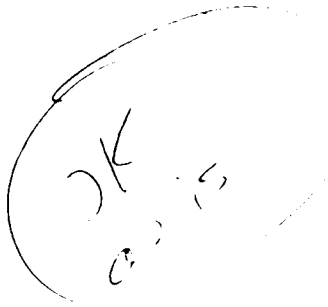
Tier/Group: 1/1

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000062 AA2.04 [3.9, 3.9]



Resolved
No comments
Question 72

*QUESTION

Unit 1 is operating at 100% power ^{when all Bus Duct Cooling is lost.} ~~and the 11 Bus Duct Cooling Fan is running. Cooling water flow has been lost to bus duct cooling. The following conditions occur:~~

- ~~- BUS DUCT COOLING SYSTEM HI TEMP annunciator alarms~~
- ~~- BUS DUCT COOLER COOLING WATER LO FLOW annunciator alarms~~
- ~~- 12 Bus Duct Cooling Fan has started and the 11 Bus Duct Cooling Fan has stopped~~

IF Bus Duct Cooling cannot be restored, at what Bus Duct Conductor Temperature must a power reduction to below 9000 amps begin?

- A. 65° C
- B. 87° C
- C. 92° C
- D. 121° C

*ANSWER C

*REFERENCE C22.5 AOP1, "Loss of Generator Bus Duct Cooling," Rev. 12

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000068 **AK3.08** [3.4, 3.9]

OK solution

*Concurs
Comments
Incorporated*

*QUESTION

1C1.3 AOP1, Shutdown From Outside The Control Room - Unit 1, ~~Reactor Trip~~
requires locally tripping all main feedwater pump breakers. What is the reason this action is taken?

- A. It prevents draining the Hotwell.
- B. It closes the Feedwater regulating and bypass valves.
- C. There is no control of main feedwater from the hot shutdown panel.
- D. It maintains the condensate header pressurized.

*ANSWER C

*REFERENCE Lesson Plan P8197L-008, page 15.

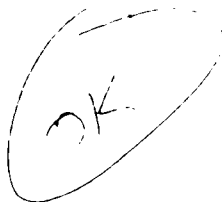
Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
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*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000007 **EA2.06** [4.3, 4.5]



*QUESTION

Which of the following plant conditions exceeds the **MAXIMUM** reactor trip setpoint value such that a reactor trip ~~MOST~~ have already occurred AND which accurately describes the Technical Specification Basis for the reactor trip setpoint?

- A. PZR water level at 86%, to protect the PZR safety relief against water relief.
- B. RCS loop flow at 94%, to protect the core against a sudden loss of one or both RCP's.
- C. PZR pressure 2390 psig, provides protection against a control rod drop accident.
- D. Reactor Neutron Flux 109%, protects the core against rapid reactivity excursions.

*ANSWER D

*REFERENCE Technical Specification 2.3 and Technical Specification Basis 2.3

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000032 AA2.06 [3.9, 4.1]

OK - w/
one circled
changed

Concurrent
Changes
incorporated
Question 75

*QUESTION

- A Unit 1 reactor startup is in progress
- N35 reads 2×10^{-10} amps; N36 read 3×10^{-10} amps
- P6 is actuated, but SR trips have NOT been blocked
- SR/IR overlap HAS been verified
- SR channel N31 reads 5×10^5 CPS
- SR channel N32 reads 3×10^3 CPS

Which of the following describes the expected plant conditions and the necessary action to be taken.

- response.*
- N32 Detector is not operating properly and is required; insert control rods to bring ~~the~~ reactor subcritical.*
- A. ~~All red bottom lights, Negative SUR, Flux Rate Reactor Trip annunciator in alarm - Enter 1E-0, "Reactor Trip or Safety Injection."~~
- Reactor has tripped and when required N32 has failed properly. Manually trip reactor and*
- ✓ B. ~~All red bottom lights, Negative SUR, Source Range HI Flux LVL Reactor Trip Alarm - Enter 1E-0, "Reactor Trip or Safety Injection."~~
- N32 detector is not operating properly but is not required;*
- ~~C. Source Range Loss of Detector Voltage annunciator in alarm, manually block Source Range trips and continue with the startup in accordance with 1C1.2, "Unit 1 Startup."~~
- D. Conditions are normal for reactor startup, manually block Source Range trips and continue with the startup in accordance with 1C1.2, "Unit 1 Startup."

*ANSWER B

*REFERENCE C47017-0103, 47017-0404, and C47013-0401

Direct/New/Modified: New

Tier/Group: 1/2

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: Comprehension-Analysis

Given the following:

*QNUM
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*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000054 AA1.01 [4.5, 4.4]

- Loss of both MFP's and automatic reactor trip from 100% power.
- Both AFW pumps running
- E-O Reactor Trip at safety injection in progress
- 11 and 21 Condensate Storage Tank levels dropping rapidly
- Pipe break on Unit 1 side of C-41-2 reported
- Break cannot be isolated

What action is required?

E-O

*QUESTION

Both Unit 1 MFP's trip, and the reactor trips on low-low steam generator level from 100% power. Immediately after both auxiliary feedwater pumps start, Condensate Storage Tank low level annunciators for the 11, 21 and 22 Condensate Storage Tanks alarm. Level in all three Condensate Storage Tanks dropping rapidly. A field operator reports a large leak from the AFW suction supply line from the Condensate Storage Tanks on the Unit 1 side of C-41-2, and he reports that he cannot shut C-41-2.

The required actions are:

- FR-H.I., LOSS OF SECONDARY HEAT SINK
- A. Transition to ~~E-1, "Loss of Reactor or Secondary Coolant,"~~ and immediately begin a feed and bleed of the reactor coolant system.
- B. ~~Enter 1C15, "Residual Heat Removal System," and line up the Residual Heat Removal System for shutdown cooling.~~
- C. Enter C28.1 AOP2, "Loss of Condensate to Auxiliary Feedwater," and line up Cooling Water to the Auxiliary Feedwater pumps suction, while continuing in E-O.
- D. ~~Enter E-O and~~ Enter C28.1 AOP2, "Loss of Condensate to Auxiliary Feedwater," and cross-connect the Auxiliary Feedwater pumps suction to the fire protection system, and line up Cooling Water to the

include valve title

*ANSWER C

*REFERENCE C47009-0603, Condensate Storage Tank LO LVL
B28A Condensate and Feedwater System
C28.1 AOP2, "Loss of Condensate to Auxiliary Feedwater," Rev. 4.

Direct/New/Modified: New

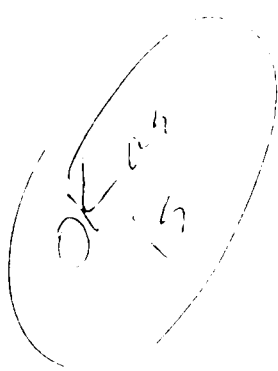
Tier/Group: 1/2

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: Comprehension-Analysis

Un correct
Changes incorporated
Question 76

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*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000058 AK1.01 [2.8, 3.1]



*QUESTION

~~The following conditions initially exist:~~

not required

- ~~- With Unit 1 operating normally at 100%, a loss of 'A' Train DC power occurs.~~
- ~~- 11 Battery Charger has failed~~
- ~~- 11 DC SYS TROUBLE annunciator lit~~
- ~~- 11 DC PANEL UNDERVOLTAGE annunciator lit~~
- ~~- The portable battery charger is then placed in service.~~

What is the capacity of ^{a Safeguards DC} ~~the portable~~ battery charger is based on?

- A. Restoring a full charge on the battery within 24 hours while supplying normal DC loads.
- B. Restoring a partial charge on the battery within 24 hours without supplying any DC loads.
- C. Restoring a partial charge on the battery within 8 hours while supplying normal DC loads.
- D. Restoring a full charge on the battery within 8 hours without supplying any DC loads

*ANSWER A

*REFERENCE USAR Section 8.5.2
Lesson Plan P8186L-005, pages 9 and 12
1C20.9 AOP1, "Loss of Unit 1 Train "A" DC, Rev. 4W
1C20.9 AOP3, "Failure of 11 Battery Charger," Rev. 5

Direct/New/Modified: **Modified**
Tier/Group: 1/2
Level of Difficulty (1 - 5): 3
Memory/Comprehension-Analysis: **Memory**

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*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000028 **AA2.11** [3.2, 3.6]

OK with changes

*Changes incorporated
Question 78*

*QUESTION
Given the following plant conditions

- Unit 1 is at 100% power.
- ☒ Charging Pump is running in automatic
- PRZR level selector switch is in the White/Blue position.

The variable leg of the blue channel of pressurizer level develops a significant leak. Which of the following is the initial response of the pressurizer level control system to this leak?

- A X* The high level alarm will come in.
- B X* The low level alarm will annunciate, letdown will isolate, and charging pump speed will go to maximum.
- C X* The low level alarm will annunciate and charging pump speed will ~~increase slightly~~ *(not change initially)*.
- D X* The level deviation alarm will annunciate, B/U heaters will energize, and charging pump speed will go to minimum.

*ANSWER B

*REFERENCE Lesson Plan P8170L-006

Direct/New/Modified: **Direct**
Tier/Group: 1/3
Level of Difficulty (1 - 5): **3**
Memory/Comprehension-Analysis: **Comprehension-Analysis**

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 *RTYP PWR-WEC2
 *EXLEVEL S
 *EXMNR Phillips
 *QVAL
 *SEC
 *SUBSORT
 *KA 000036 AA1.02 [3.1, 3.2]

*Order changed
 rate is 6 inches
 per minute
 Rust OK*

*This rate may not be
 determined to be hazardous
 per DS.2 AOP 3 step 2.4.6.*

*QUESTION

A core ~~unload~~ ^{offload} is in progress. A fuel ~~bundle~~ ^{element} is in the process of being lifted out of the core. Fuel ~~The upper~~ handling personnel observe that reactor cavity water level has started to drop at a rate of 1 inch per 5 minutes. ~~R48 and R49 have not yet reached their alarm setpoint at the time that the lowering of reactor cavity level is noticed.~~ ~~No radiation monitors are in alarm.~~

What are the appropriate actions:

- Immediately enter C1.6 AOP 1, "Containment Evacuation," and evacuate the containment, ~~regardless of whether either R48 or R49 alarms~~ ^{stop fuel ~~movement~~ ^{movement}}.
- ~~Wait until either R48 or R49 alarms locally, enter C1.6, AOP 1 "Containment Evacuation," and D5.2, "Decreasing Refueling Water Level During Refueling," stop fuel movement and verify the fuel bundle is below reactor cavity water level. Lower the fuel into the upper.~~ ^{IF}
- Immediately enter D5.2, "Decreasing Refueling Water Level During Refueling," lower the fuel bundle into the core, and ~~then enter C1.6 AOP 1, "Containment Evacuation," regardless of whether either R48 or R49 alarm.~~ ^{Take actions to isolate the leak and restore refueling pool level.}
- Wait until ~~both~~ ^{either} R48 and R49 alarm locally, enter C1.6, AOP 1 "Containment Evacuation," and D5.2, "Decreasing Refueling Water Level During Refueling," stop fuel movement and verify the fuel bundle is below reactor cavity water level.

*ANSWER C

*REFERENCE F3-2, "Classification of Emergencies," Rev. 27W
 Lesson Plan P8182L-003, Rev. 4, page 63
 C1.6, AOP 1 "Containment Evacuation," Rev. 6W
 D5.2, "Decreasing Refueling Water Level During Refueling, Rev. 2

Direct/New/Modified: **New**
 Tier/Group: 1/3
 Level of Difficulty (1 - 5): 2
 Memory/Comprehension-Analysis: **Comprehension-Analysis**

*Concurred
 Change incorporated
 Question 74*

*QNUM
*HNUM
*ANUM
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*QDATE
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*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 000056 K3.02 [4.4, 4.9]

OK 10/10/21

*Concerned
Changes incorporated
Question 80*

*QUESTION

'REACTOR TRIP OR SAFETY'

Immediately following a reactor trip an operator performs Step 3 of 1E-0, ~~Reactor Trip or Safety~~
(INJECTION) Injection and sees the following annunciators in alarm:

47024-0101, "BUS 15 4.16 KV LOCKED OUT;"
47024-0201, "BUS 15 4.16 KV UNDERVOLTAGE;"
47024-0401, "BUS 15 BKR 3 SOURCE FROM TRANSFORMER RY TRIPPED;"
47024-0501, "BUS 15 BKR 7 SOURCE FROM TRANSFORMER CT11 TRIPPED;"
47024-0802, "D1 EMERGENCY GENERATOR FAILURE TO START;"

What is the reason safeguards buses are verified to be energized and what is the appropriate procedure to enter for the above condition?

- A. Verify sufficient power available to operate safeguards equipment; 1C20.5 AOP1, "Reenergizing 4.16 KV Bus 15."
- B. Verify sufficient power available to operate safeguards equipment; 1ECA 0.0, Loss of All AC Power.
- C. Verify diesel generator operability; 1C20.5 AOP1, "Reenergizing 4.16 KV Bus 15."
- D. Verify diesel generator operability; 1ECA 0.0, Loss of All AC Power.

*ANSWER A

*REFERENCE 1E-0, "Reactor Trip or Safety Injection," Rev. 19
47024-0101, "Bus 15 4.16 KV Locked Out;"
47024-0201, "Bus 15 4.16 KV Undervoltage;"
47024-0401, "Bus 15 BKR 3 Source From Transformer, RY Tripped;"
47024-0501, "Bus 15 BKR 7 Source From Transformer CT11 Tripped;"
47024-0802, "D1 Emergency Generator Failure To Start."

Direct/New/Modified: **New**

Tier/Group: 1/3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000007 K5.01 [2.2, 2.6]

*QUESTION

With the RCS at normal operating pressure and temperature, what is the condition of the steam entering the PRT if a PORV opens ~~spontaneously~~? (ASSUME: PRT is at 100° F, 5 psig and an ideal thermodynamic process.) What is the correct procedure to mitigate this condition?

Temperature of
~~Saturated steam-water mixture~~ at (1) °F; and (2) _____.
(1) _____ (2) _____

- A. 162°F; 1C4 AOP1, "Reactor Coolant Leak."
- B. 162°F; 1E-1, "Loss of Reactor or Secondary Coolant."
- C. 227°F; 1C4 AOP1, "Reactor Coolant Leak."
- D. 227°F; 1E-1, "Loss of Reactor or Secondary Coolant."

*ANSWER C

*REFERENCE Steam Tables
1C4 AOP1, "Reactor Coolant Leak," Rev. 6

Direct/New/Modified: **Modified**

Tier/Group: 2/3

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*Can unred
changes incorporated
Question 81*

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000008 A1.02 [2.9, 3.1]

*QUESTION

~~Unit 1 is shutdown, RCS temperature is 190 degrees with HI HI in service cooling down the RCS. The following annunciators have been in an alarm status for over 2 hours, 11 CC HX OUTLET HI TEMP and 12 CC HX OUTLET HI TEMP. CC HX outlet temperatures are at 125 degrees. Under these conditions the CC heat exchanger outlet temperature should be (1) to (2) .~~

(1)

(2)

- A. reduced, minimize erosion of the RHR heat exchanger baffle plates.
- B. maintained, minimize plating out chromates in the CC system which could foul heat transfer surfaces.
- C. reduced, prevent boiling in some of the heat exchangers cooled by CC with large temperature differentials.
- D. maintained, prevent excessive cooling of the reactor vessel.
- E.

*ANSWER C

*REFERENCE 1C14, "Component Cooling System Unit 1," Rev. 18.

Direct/New/Modified: **Modified**

Tier/Group: 2/3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*Concurred changes
incorporated
Question 82*

*OK w/
reformat
check RCS
well*

Given the following:

- Unit 1 in COLD SHUTDOWN*
- RCS at 190 deg F*
- 11 RHR pump running*

The following annunciators have been in alarm for the last two hours:

- 11 CC HX HI TEMP*
- 12 CC HX HI TEMP*

CC HX outlet temperatures are 125 deg F.

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL S
 *EXMNR Phillips
 *QVAL
 *SEC
 *SUBSORT
 *KA 0000045 **A2.17** [2.7, 2.9]


*OK
date
clean up columns*

*Concurred
Comments incorporated
Question 83*

***QUESTION**

While conducting SP1054, "Quarterly Turbine Stop , Governor and Intercept Valve Test," during the performance of step 7.3 1A Reheat Stop and Intercept Valve Test, the operator presses and holds the **TEST 1IRL** pushbutton. Upon releasing the **TEST 1IRL** pushbutton the test solenoids fail to de-energize.

The 1A Reheat Stop and Intercept Valves are 1 and you would direct the operator to 2 ~~and enter~~ procedure 3 .

	1. <u>Valve Position</u>	2. <u>Operator Action</u>	3. <u>Procedure in Effect</u>
A.	Closed,	trip the reactor,	1E0, "Reactor Trip or Safety Injection"
B.	Open,	reduce turbine load to 80%; <i>isolate EH oil to the affected valves</i>	1C23 AOP2, "Malfunction of Turbine EH Control System"
C.	Closed,	reduce turbine load to 70% <i>over the next several hours</i>	1C1.4, "Unit 1 Power Operation"
D.	Open,	reduce turbine load to 50% <i>expeditiously</i>	1C1.4 AOP1, "Rapid Power Reduction - Unit 1" 

***ANSWER** C

***REFERENCE** 1C23 AOP2, "Malfunction of Turbine EH Control System," Rev. 8
 SP1054, "Quarterly Turbine Stop , Governor and Intercept Valve Test," Rev. 24.
 B23, "Turbine Control System," Rev. 3

Direct/New/Modified: **New**
 Tier/Group: 2/3

Level of Difficulty (1 - 5): 4

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.1.6 [2.1, 4.3]

OK change

*correct
cannot incorporate
Question 84*

*QUESTION

Which one of the following responsibilities of the Emergency Director CANNOT be delegated to support personnel?

- A. Authorize radiation exposure in excess of normal limits.
- B. ~~Authorize~~ ^{Direct} Protective Action Recommendations.
- C. Account for all personnel within 30 minutes of an evacuation.
- D. Direct the activation of all onsite emergency response centers.

*ANSWER A

*REFERENCE F3, "Emergency Onsite Organization," Rev.

Direct/New/Modified: **Modified**

Tier/Group: 3

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.1.10 [2.7, 3.9]



*QUESTION

In accordance with Section 2.C.(1) of the Facility Operating License the Nuclear Management Company is authorized to operate the Unit 2 Facility at which of the steady state maximum reactor power levels?

- A. 102% highest power range nuclear instrumentation channel.
- B. 102% average power range nuclear instrumentation channels.
- C. 592 Megawatts Electric power.
- D. 1650 Megawatts Thermal power.

*ANSWER D

*REFERENCE Unit 2 Facility Operating License

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.1.22 [2.8, 3.3]

File

*Concurred
comment incorporated
Question 86*

*QUESTION

When shutting down for refueling when does the reactor first enter Mode 6 *(defueling)*?

- A. Core Alterations begin.
- B. ONE head flange bolt detensioned.
- C. ALL head flange bolts detensioned.
- D. The reactor vessel head lifted.

*ANSWER B

*REFERENCE Technical Specification Table 1-1.

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.1.33 [3.4, 4.0]



*QUESTION

Which of the following is the Technical Specification entry requirement for Technical Specification 3.4.D regarding the Secondary Coolant System radio-chemistry limit and what is the basis for that limit.

- A. .10 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131, limits off-site radiation dose to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture.
- B. .10 $\mu\text{Ci/gm}$ Gross Activity Level, limits off-site radiation dose to a small fraction of 10 CFR Part 100 limits in the event of a steam line rupture.
- C. .10 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131, limits off-site radiation dose to a small fraction of 10 CFR Part 100 limits in the event of a 150 gpd primary to secondary leak.
- D. .10 $\mu\text{Ci/gm}$ Gross Activity Level, limits off-site radiation dose to a small fraction of 10 CFR Part 100 limits in the event of a 150 gpd primary to secondary leak.

*ANSWER A

*REFERENCE Technical Specification 3.4.D

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.2.6 [2.3, 3.3]

*QUESTION

In addition to an Independent Review, Technical Review, and an Approval Review, what are the additional minimum number of reviews required per 5AWI 1.5.2, "Procedure Change Process," to be performed for approval to a change to a procedure required by the Technical Specifications?

- A. Writer's Guide Review, User Review, Ops Committee Review.
- B. User Review, Ops Committee Review.
- C. Writer's Guide Review, Ops sub-Committee Review.
- D. Writer's Guide Review, User Review.

*ANSWER A

*REFERENCE 5AWI 1.5.2, "Procedure Change Process," Rev. 20.

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): 4

Memory/Comprehension-Analysis: **Memory**

Replaced
checked

Not SRO knowledge.
Would be fair to ask
which review
Most of these reviews are
done by procedures group.

Procedures required
by Technical Specifications
must be reviewed by the:
Licensee Review Committee
A. ~~Operations Manager~~
✓ B. Operations Committee
C. Safety Audit Committee
D. ~~Plant Manager~~
Offsite Review Committee

Continued
Comments incorporated
Question 88

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.2.22 [3.4, 4.1]



Cancelled
Editorial Change made
Question 89

*QUESTION

Who's authorization is required to resume operations after a SAFETY LIMIT has been exceeded in accordance with Technical Specification 2.2.F?

- A. Vice President of Nuclear Generation
- B. Chairman of the Safety Audit Committee
- C. Station Manager
- D. ~~NRC~~ Nuclear Regulatory Commission

*ANSWER D

*REFERENCE Technical Specification 2.2.F

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.2.29 [1.6, 3.8]

OK not changed

*Carried
change incorporated
Question 90*

*QUESTION

During refueling operations the Manipulator Crane Operator determines it will be necessary to use the OVERLOAD BYPASS to lower a fuel assembly into the vessel. ~~Whose authority is necessary to perform this operation?~~ *Which two people listed could approve the bypass?*

- A. Two Nuclear Engineers
- B. The Manipulator Crane Operator and a Nuclear Engineer
- C. The Shift Supervisor and the Manipulator Crane Operator
- D. The Shift Supervisor and the Containment SRO

*ANSWER D

*REFERENCE C17, "Fuel Handling System," Rev. 28.
Lesson Plan P8182L-003, "Fuel Handling," Rev. 4

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.2.26 [2.3, 3.3]

*This would be done -
an error like this is
a BIG deal.*

OK with all changes.

*QUESTION *Review of the Fuel transfer log the*

one note would be to an occupied rack location.
During offload of the fuel from the reactor vessel the fuel handling supervisor determines that an offloaded fuel element has been mispositioned within the SFP. What action must be taken to leave the mispositioned fuel element in its current position within the pool ~~correct the log?~~

- A. A Nuclear Engineer must approve ^{the} change to the Fuel Transfer Log.
- B. The refueling SRO must initial the Fuel Transfer Log to approve the change in position.
- C. A Nuclear Engineer and an SRO must approve ^{the} change to the Fuel Transfer Log.
- D. The ^{Plant} ~~Station~~ Manager must authorize a change to the Fuel Transfer Log.

*ANSWER C

*REFERENCE D5.1, "Spent Fuel Pit Fuel Handling Operations," Rev. 24
Lesson Plan P8182-003, "Fuel Handling," Rev. 4

Direct/New/Modified: **Modified**
Tier/Group: 3
Level of Difficulty (1 - 5): 3
Memory/Comprehension-Analysis: **Memory**

*Concurred
Comment incorporated
Question 91*

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.3.1 [2.6, 3.0]

*QUESTION

The Radiation Protection Supervisor reports to you that a Radiation Protection Technician was ~~working with his hands in a 150 Rem/hr field for one half hour. What time limit applies to when this must be reported to the NRC?~~ ^{received a dose to his right hand in excess of 10 CFR 20 limits.}

~~Before~~ ^{like}

- A. 1 hour
B. 4 hours
C. 24 hours
D. 30 days

*ANSWER C

*REFERENCE 10 CFR Part 20

Direct/New/Modified: **Modified**

Tier/Group: 3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Comprehension-Analysis**

OK
Kemp's name built
into right to the
file about 10 CFR 20

~~Assume any station authorization has been received.~~
A notification to the NRC must be made within ...

Conserved
cannot incorporated

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.3.4 [2.5, 3.1]

60

*QUESTION

A 40 year old operator has a lifetime exposure of 5 Rem which includes 1 Rem so far this year. A General Emergency is declared and the above operator has volunteered to be sent into an area with general area radiation levels of 7 Rem/hr. The operator must operate equipment that will stop further off-site release and it is estimated that it will take him about 2 hours.

What must be done for this emergency exposure to be authorized?

- A. The Radiation Protection Group leader in the OSC must approve Part I of the Emergency Exposure Authorization Form.
- B. The Shift Manager must authorize the exposure and the operator must be briefed that he will exceed his annual administrative dose limit.
- C. The Emergency Director must authorize the exposure and the operator must be briefed on the expected radiation levels, the expected exposure to be received, and the effects of the exposure.
- D. The operator CANNOT be authorized to receive this exposure because he will have exceeded twice his annual legal dose limit.

*ANSWER C

*REFERENCE F3-12, "Emergency Exposure Control," Rev. 14W

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.3.11 [2.7, 3.2]
*QUESTION
Given the following conditions

*In May all CT's
must be operating.*

OK

*Concerned
Comments
incorporated
Question 94*

- Wind is currently blowing from 270 degrees at 12 mph.
- Unit 1 has been operating at 75% for several weeks with high reactor coolant activity due to a fuel rod cladding ~~crack failure~~ *line*
- Unit 2 is stable at 100% power.
- A gaseous radioactive waste release is being performed, ~~with river water temperature at 80°F~~

What wind conditions would the ODCM and waste gas release procedures require stopping the release; and why do they require stopping the waste gas release?

- A. Wind conditions change such that it starts blowing from 90 degrees at 15 mph; to prevent unnecessary exposure to the most heavily populated areas with the exclusion zone.
- B. Wind conditions change such that it starts blowing from 358 degrees at 6 mph; to prevent waste gas system releases from entering the river due to scrubbing from the cooling towers.
- C. Wind conditions change such that it starts blowing from 358 degrees at 6 mph; to prevent exceeding 10 CFR Part 100 limits at the site boundary in case of an accident.
- D. Wind conditions change such that it starts blowing from 90 degrees at 15 mph; to prevent contaminating the surface area of the cooling towers.

*ANSWER B

*REFERENCE ODCM, Rev. 16, Section 3.7
C21.3-10.1, "Releasing Radioactive Gas From 121 Low Level Gas Decay"

Tank," Rev. 13

Direct/New/Modified: **Modified**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.3.6 [2.1, 3.1]



*QUESTION

Who must review and approve a release from the low level gas decay tank?

- A. Shift Manager and Shift Supervisor.
- B. Superintendent Plant Operations and Superintendent Radiation Protection.
- C. Shift Supervisor and Superintendent Radiation Protection.
- D. Station Manager and Shift Manager

*ANSWER C

*REFERENCE C21.3-10.1,"Releasing Radioactive Gas From 121 Low Level Gas Decay Tank," Rev. 13

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 00000002.4.1 [4.3, 4.6]

OK - changes

*Cancelled
changes incorporated
Question 96*

*QUESTION

Unit 1 annunciator 47011-0401, "11 STM GEN HI WATER LVL TURBINE TRIP," has alarmed.

- PZR level is lowering.
- PZR pressure is lowering.
- Bus 15 has de-energized and the D1 D/G has failed to start.
- All but 5 control rods have rod bottom light indications
- Reactor power is 7% and SUP is zero.

What procedure must be entered first and what is the basis for the first immediate action for that procedure?

C.M.

- A. 1E-0, "Reactor Trip or Safety Injection." The turbine is tripped to prevent an uncontrolled cooldown of the RCS.
- B. 1FR-S.1, "Response to Nuclear Power Generation/ATWAS." The turbine is tripped to prevent an uncontrolled cooldown of the RCS.
- C. 1E-0, "Reactor Trip or Safety Injection." Reactor trip must be verified to ensure that the only heat being added to the RCS is from decay heat and RCP heat.
- D. 1FR-S.1, "Response to Nuclear Power Generation/ATWAS." The ATWS analyses have shown that actuation of AFW within 60 seconds after the failure to scram provides acceptable results.

*ANSWER C

*REFERENCE 1FR-S.1, "Response to Nuclear Power Generation/ATWAS,"
1E-0, "Reactor Trip or Safety Injection,"
Lesson Plan P8197L-010

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL S
 *EXMNR Phillips
 *QVAL
 *SEC
 *SUBSORT
 *KA 0000000 2.4.22 [2.3, 3.3]

Connected
 Comments incorporated
 Question 97

OK with
 suggested
 changes
 See attached
 page

*QUESTION

After a Unit has tripped and ~~Step 3~~ of E-0, "Reactor Trip or Safety Injection," ~~has been~~ is entered.
 completed, the reactor operator gives a report that indicates a Critical Safety Function Red Path for Heat Sink
 has been identified. ~~When would it be correct to NOT transition to the appropriate functional~~
~~recovery procedure? The RED path remains in despite E-0 actions. When should the~~
~~transition to the appropriate FR series procedure be made?~~

- A. Prior to completing all the immediate action steps of E-0. ~~Correct~~
- B. If Step 3 of E-0 requires a transition to ~~ECA 0.0 series procedure.~~ ~~Correct~~
 Loss of All AC Power.
- C. Prior to being specifically directed to an FR by steps in E-0.
- D. Never, transition to the appropriate functional recovery procedure immediately.

*ANSWER B

*REFERENCE Lesson Plan P8197L-010
 1ECA - 0.0, "Loss of All Safeguards AC Power."

Direct/New/Modified: New

Tier/Group: 3

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: Comprehension-Analysis

- A. Following completion of E-0 Immediate Action steps
- B. Upon transition from E-0 to ECA-0.0 at Step 3
- ✓ C. Upon failure to reestablish a heat sink at Step 12
- D. Upon transition to E-1 at Step 21

Prairie Island SRO Exam

*KA 0000000 2.4.22 [2.3, 3.3]

*QUESTION 97

After a Unit has tripped and ~~Step 3~~ of E-0, "Reactor Trip or Safety Injection," ~~has been~~ completed the reactor operator gives a report that indicates a Critical Safety Function Red Path for recovery procedure? *immediate actions are in progress*

Immediate follow-up
A. Prior to completing all the immediate action steps of E-0.

ANS B. If Step 3 of E-0 requires a transition to an ECA 0.0 series procedure.

C. Prior to being specifically directed to an FR by steps in E-0.

D. ~~Never~~ transition to the appropriate functional recovery procedure immediately. *dist*

~~Follow-up~~ Following completion of all the immediate action steps of E-0. *Immediately if*

When E-0 directs transition to FR H-1.

✓ C. Upon transition to E-1, Loss of Reactor and Circulation (ORCA)

C. Upon transition to E-1, Loss of Reactor and Circulation (ORCA).

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.4.41 [2.3, 4.1]



*QUESTION

Which of the following definitions would define an Alert classification of emergency?

- A. Major plant failures have resulted in substantial core degradation a radioactive release is occurring and is expected to exceed EPA limits beyond the site boundary.
- B. Major failure of plant functions have occurred which are required for protection of the public, a radioactive release is occurring but not expected to exceed EPA limits at the site boundary.
- C. Failure of plant equipment has resulted in a substantial degradation of the level of safety of the plant, any release that may occur is not expected to exceed small fractions of the EPA limits at the site boundary.
- D. An event has occurred which could potentially degrade the level of safety of the plant, no release of radioactive material is expected.

*ANSWER C

*REFERENCE F3-2, "Classification of Emergencies," Rev. 28.

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **4**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.4.44 [2.1, 4.0]

Q. changed

*Con unnel
Chowse unreported
Question 99*

*QUESTION

Which is the lowest level of emergency classification that always **REQUIRES** Protective Action Recommendations (PARS) be made; and who is responsible for ensuring the Prairie Island Indian Community are notified of ~~approved~~ recommended protective actions?

- A. General Emergency; State of Minnesota
- ✓ B. General Emergency; Emergency Director
- C. Site Area Emergency; State of Minnesota
- D. Site Area Emergency; Emergency Director

*ANSWER

XB

*REFERENCE F3-8, "Recommendations For Offsite Protective Actions," Rev. 19.

Direct/New/Modified: **Modified**

Tier/Group: 3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*Indian Community is
treated just like
a state/local govt.*

*PINL 377
PINL 580*

2 p F.31

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL S
*EXMNR Phillips
*QVAL
*SEC
*SUBSORT
*KA 0000000 2.4.28 [2.3, 3.3]



***QUESTION**

The FBI has notified the station management that information has been received and corroborated that an outside organization has several members that work inside the plant boundary and plan to plant an explosive device in one of the vital areas in the next 24 hours.

What is the correct course of action?

- A. Determine that it is a low credible threat and make an emergency classification
- B. Determine that it is a high credible threat and make an emergency classification
- C. Determine that it is a low credible threat and notify security
- D. Determine that it is a high credible threat and maintain communications with the FBI

***ANSWER B**

***REFERENCE F3-31, "Response To Security Related Threats," Rev. 4.**

Direct/New/Modified: **New**

Tier/Group: **3**

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
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 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 000005AA1.04 [3.9, 3.9]

COMMENTS ON RO WRITTEN EXAM

*QUESTION

Unit 1 is at 100% power.

What Main Control Board alarm would be available to monitor for a stuck control rod and what maximum power level must reactor power be reduced to determine whether a control rod is stuck or misaligned?

	<u>Main Control Board Alarm</u>	<u>Maximum Power Level</u>
A.	"POWER RANGE UPPER/LOWER DETECTOR DEVIATION"	Below 90%
B.	"COMPUTER ALARM ROD DEVIATION/SEQUENCING"	Below 80%
C.	"NIS POWER RANGE CHANNEL DEVIATION"	Below 70%
D.	"NIS POWER RANGE POSITIVE FLUX RATE CHANNEL ALERT"	Below 50%

*ANSWER B

*REFERENCE 1C5 AOP5, "Misaligned Rod, Stuck Rod, and/or RPI Failure or Drift", Sections 2.1.4 and 2.4.1

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
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*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000015/17AA2.10 [3.7, 3.7]

*Concurred.
Comment incorporated.
N Valan*

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is in Mode 3.
- RCS temperature is at 547°F.

Which of the following conditions would require an ^{fully capitalize} immediate trip of an RCP?

- A. #1 seal leakoff indicates 0.1 GPM with a Charging Pump running.
- B. Thermal barrier heat exchanger tube rupture with a Charging Pump running.
- C. #1 seal leakoff temperature indicates 215°F with all Charging Pumps unavailable.
- D. Lower radial bearing water temperature indicates 215°F with all Charging Pumps unavailable.

*ANSWER C

- *REFERENCES
1. Lesson Plan P8170L-002, "Reactor Coolant Pumps",
Enabling Objective 8
 2. C12.1 AOP1, "Loss of RCP Seal Injection"

Direct/New/Modified: **Modified**
Tier/Group: 1/1
Level of Difficulty (1 - 5): **3**
Memory/Comprehension-Analysis: **Memory**

*QNUM
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 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA W/E09&E10 G 2.4.7 [3.1, 3.8]

*QUESTION

The following plant conditions exist on Unit 1:

- A natural circulation RCS cooldown is in progress
- RCS hot leg temperatures are at 540°F
- RCS pressure is at 1900 psig and Automatic SI has been blocked

What limitations are placed on the RCS cooldown rate in the cold legs to preclude reactor vessel upper head void formation for ES-0.3A, NATURAL CIRCULATION COOLDOWN WITH CRDM FANS and for ES-0.3B, NATURAL CIRCULATION COOLDOWN WITHOUT CRDM FANS?

	<u>ES-0.3A</u>	<u>ES-0.3B</u>
A.	Less than 10°/ HR	Less than 5°/ HR
B.	Less than 25°/ HR	Less than 10°/ HR
C.	Less than 50°/ HR	Less than 25°/ HR
D.	Less than 100°/ HR	Less than 50°/ HR

*ANSWER B

- *REFERENCES
1. Lesson Plan P8197L-011, "E-0 Review", Enabling Objective 16 and pages 16, 17, and 18
 2. ES-0.3A, NATURAL CIRCULATION COOLDOWN WITH CRDM FANS, "Purpose" and steps 9, 11, 12, 16 and 22
 3. ES-0.3B, NATURAL CIRCULATION COOLDOWN WITHOUT CRDM FANS, "Purpose" and steps 8, 10, 11, 14, and 23

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
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*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000024AK1.04 [2.8, 3.6]

*QUESTION

During Emergency Boration of the RCS, what is the reason for restricting the ratio of boric acid flow to total charging flow and what is the maximum boric acid flow allowed?

- A. To prevent plugging of the RCP seal injection throttle valves, 75% of the total charging flow.
- B. To prevent excessive wear on the charging pump seals, 75% of the total charging flow.
- C. To prevent plugging of the RCP seal injection throttle valves, 50% of the total charging flow.
- D. To prevent excessive wear on the charging pump seals, 50% of the total charging flow.

*ANSWER A

- *REFERENCES
- 1. C12.5 AOP1, "Emergency Boration of the Reactor Coolant System", CAUTION on page 3
 - 2. C12.5, "Boron Concentration Control"

Direct/New/Modified: **Direct**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
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*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000026AA2.02 [2.9, 3.6]

*QUESTION

*Concurred.
Comments incorporated.
ML/lor*

The following plant conditions exist on Unit 1:

- Unit 1 is at 95% power
- ~~The~~ 11 RHR Pump is being run per surveillance procedure SP 1089A, "Train A RHR Pump and Suction Valve from RWST Quarterly Test"
- "11 CC SURGE TANK HI/LO LEVEL" annunciator just alarmed.
- CC Surge Tank level is at -6 inches and slowly decreasing
- CV-31432, "11 CC Surge Tank Makeup Control Valve" has been locally verified to be open.
- VCT level is increasing with makeup secured.

What is the ^{location of the CC leak?} ~~cause of the loss of CC?~~

- A. 11 RHR Heat Exchanger
- B. Letdown Heat Exchanger
- C. Seal Water Heat Exchanger
- D. RCP Thermal Barrier Heat Exchanger

*ANSWER C

- *REFERENCES
1. 1C14 AOP1, "Loss of Component Cooling"
 2. 1C14 AOP2, "Leakage Into The Component Cooling System", Table 1
 3. Alarm Response Procedure C47020, Annunciator Location 47020-0203 for "11 CC SURGE TANK HI/LO LVL"
 4. Lesson Plan P8182L-002, "Radiation Monitoring System", pages 28, 29, and 55

Direct/New/Modified: **Direct**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL R
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 000027AK3.03 [3.7, 4.1]

*QUESTION

The following plant conditions exist on Unit 2:

- 2ECA-3.3, SGTR WITHOUT PRESSURIZER PRESSURE CONTROL has just been entered
- Both RCPs are shutdown
- Actions to restore pressurizer pressure control are being taken

Keep this

The step to "Check If SI Should Be Terminated" can be ENTERED:

- ~~A. ONLY if PRZR level is on scale to ensure that SI capability is sufficient to increase RCS inventory in the event SI reinitiation is required at a later time~~
- ~~B. At any time if RVLIS full range level is above the top of the hot legs in order to minimize the potential for SG overfill~~
- ~~C. ONLY if PRZR level is above the top of the PRZR heaters to ensure PRZR level will remain on scale when SI is terminated~~
- ~~D. At any time if SG level is such that overfill is a concern~~

*ANSWER ~~D~~

- *REFERENCES
1. Lesson Plan P8197L-013A, "E-3 Series Review", Enabling Objectives 18, 19, and 21
 2. Lesson Plan P8197L-013B, "E-3 Series Review", pages 173 and 174
 3. ECA-3.3, SGTR WITHOUT PRESSURIZER PRESSURE CONTROL, steps 1, 6, and 7 and Background Information for these steps

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

Change to the following:

Which of the following actions is the **PREFERRED** method of restoring pressure control?

- A.** Start one RCP and establish normal spray.
- B. Open the RCS Head Vent solenoid valves to the PRZ
- C. Establish conditions for opening a PRZR P&CV
- D. Establish auxiliary spray flow

Concurred.
Comments incorporated.
9/16/00

This is beyond RO knowledge. You are basically asking memory of step that exists a procedural loop. The action referenced is for terminating SI, when the loop contains the pressurizer pressure control actions. The k/A refers to

*QNUM
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*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000040 **W/E12 EA1.3** [3.4, 3.9]

*Concurred.
Comments incorporated.
N. Calver*

*QUESTION

The following plant conditions exist on Unit 2:

- (2) ECA-2.1, UNCONTROLLED DEPRESSURIZATION OF BOTH STEAM GENERATORS is in effect
- (2) The TD AFW pump is running and is the only source of feed flow available
- The RCS cooldown rate is 150°F/Hr
- Both SG narrow range levels are offscale low
- Containment pressure is less than 1 psig

AFW flow should be:

- A. Isolated to both SGs, resulting in a RED path on the "Heat Sink" CSFST.
- B. Reduced to 40 gpm to each SG, resulting in a RED path on the "Heat Sink" CSFST.
- C. Reduced to both SGs, while maintaining total flow sufficient for a GREEN path on the "Heat Sink" CSFST.
- D. Isolated to one SG, while maintaining total flow sufficient to the other SG for a GREEN path on the "Heat Sink" CSFST.

*ANSWER B

- *REFERENCES
- 1. ECA-2.1, UNCONTROLLED DEPRESSURIZATION OF BOTH STEAM GENERATORS, step 2
 - 2. F-0.3, HEAT SINK
 - 3. Lesson Plan P8197L-012, Enabling Objectives 5, 10, and 15 and page 34

Direct/New/Modified: **Modified**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA W/E08 EA1.3 [3.6, 4.0]

*QUESTION

Which of the following describes the proper operator actions following a steam line break which results in an entry to FR-P.1, RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION?

- A. Allow RCS to heat up, AND
Maintain RCS pressure stable to allow soak
- B. Hold RCS temperature stable, AND
Maintain RCS pressure stable to allow soak
- C. Allow RCS to heat up, AND
Decrease RCS pressure to minimize subcooling
- D. Hold RCS temperature stable, AND
Decrease RCS pressure to minimize subcooling

*ANSWER D

*REFERENCE 1FR-P.1, RESPONSE TO IMMINENT PRESSURIZED THERMAL SHOCK CONDITION, steps 13 and 15 and Background Information for steps 13 and 15

Direct/New/Modified: **Direct**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000051 G2.1.32 [3.4, 3.8]

*Concurred.
(Comments incorporated.
Miles)*

*QUESTION

The following plant conditions exist on Unit 2:

- Unit 2 is at 5% power
- The Main Turbine is at 1800 RPM in preparation for placing the generator on line
- All systems are in their normal lineup for the plant condition
- Condenser vacuum has started to decrease and is now at 15" Hg

What automatic actions would occur and what equipment would be affected (if any) by this decrease in condenser vacuum?

- A. ONLY the Main Turbine would trip
- B. ONLY the condenser steam dump valve ~~valve~~ would go closed
- C. NO automatic actions would occur and NO equipment would be affected
- D. BOTH the Main Turbine would trip and the condenser steam dump valves ~~valves~~ would go closed

*There is only one
condenser steam dump
valve*

*ANSWER D

- *REFERENCES
1. Lesson Plan P8174L-002, "Steam Dump Control System", Enabling Objective 3 and pages 12 and 17
 2. Alarm Response Procedure C47014, Annunciator Location 47014-0502 for "CDSR STEAM DUMP PERMISSIVE"
 3. Alarm Response Procedure C47008, Annunciator Location 47008-0209 for "CONDENSER HI PRESS"

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000055EK1.02 [4.1, 4.4]

*QUESTION

In ECA-0.0, LOSS OF ALL SAFEGUARDS AC POWER, during the rapid depressurization of both SGs to 300 psig, an overshoot occurs and both SGs are reduced to 180 psig before the depressurization is stabilized.

What is the potential operational implication that could result from this overshoot in SG depressurization?

- A. The "Integrity" CSFST may be challenged.
- B. The "Subcriticality" CSFST may be challenged.
- C. Natural circulation may not remain an effective form of heat removal.
- D. Sufficient steam supply may not be available for effective TDAFP operation.

*ANSWER C

- *REFERENCE
- 1. Lesson Plan P8179L-011, "E-0 Review", Enabling Objective 20 and pages 25 and 26
 - 2. ECA-0.0, LOSS OF ALL SAFEGUARDS AC POWER, step 28 and first CAUTION before step 28 (and Background Information for the step and CAUTION)

Direct/New/Modified: **Direct**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000057AK3.01 [4.1, 4.4]
*QUESTION

*Concerned.
Comment incorporated.
N. V. L. H.*

The following plant conditions exist on Unit 1:

- A reactor startup is in progress on Unit 1
- Source range channels N31 and N32 indicate 10^4 CPS
- Intermediate range channels N35 and N36 indicate 5×10^{11} AMPS

The annunciator "PNL 111 INSTR BUS 11 (WHITE) LOSS OF VOLTAGE" has just alarmed.

What actions are required for this condition?

- A. Verify reactor trip, AND
Restore power to Panel 111 from alternate AC power source
- B. ~~Verify Rod Control in "MANUAL", AND~~
Restore power to Panel 111 from alternate AC power source
- C. Verify reactor trip, AND
Isolate Instrument Inverter 11
- D. Commence a reactor shutdown to insert all control and shutdown banks, AND
Isolate Instrument Inverter 11

*Reacts changes in
reactor during
startup*

*ANSWER A

- *REFERENCES
1. Lesson Plan P8184L-002, "Nuclear Instrumentation System", pages 14 and 15
 2. Alarm Response Procedure C47005, Annunciator Location 47005-0207, "PNL 111 INSTRU BUS 11 (WHITE) LOSS OF VOLTAGE"
 3. 1C20.8 AOP1, "Abnormal Operation, Instrument AC Inverters", step 2.4.1

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000062AK3.02 [3.6, 3.9]

*Concurred.
Comments incorporated.
N. Walker*

*QUESTION

The following plant conditions exist:

- A Safety Injection has actuated on Unit 2
- Cooling Water System pressure is at 60 psig

*Add "system" to be
more specific*

Which of the following describes the automatic alignment of the Cooling Water System under these conditions?

- A.
 - Unit 2 Containment FCU cooling water outlet orifice bypass valves will close
 - Unit 2 Containment FCU Cooling Water Discharge Radiation Monitor isolation valves will open
- B.
 - Unit 1 Containment FCU inlet and outlet isolation valves will close if initially open
 - Cooling water to the Unit 2 CRDM Shroud Cooling Coils will isolate
- C.
 - Unit 2 Containment FCU inlet and outlet cooling water isolation valves will open
 - Unit 2 Containment FCU Cooling Water Discharge Radiation Monitor isolation valves will open
- D.
 - Unit 2 Containment FCU cooling water outlet orifice bypass valves will close
 - Cooling water to the Unit 2 CRDM Shroud Cooling Coils will isolate

*ANSWER C

*REFERENCE Lesson Plan P8176L-003, "Cooling Water System", Enabling Objective 9 and pages 59 and 60

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000067AA1.07 [2.9, 3.0]

*QUESTION

The following plant conditions exist:

- The annunciator "FIRE DETECTION PANEL FP121 FIRE ALARM" has alarmed.
- Fire Detector Panel 121 shows a "FIRE" light in Zone 31 (Chiller Rooms)
- A fire has been locally confirmed in Zone 31

What action is required before the fire alarm in the Main Control Room can be reset at Fire Detection Panel 121 by placing the switch momentarily to the "RESET" position?

- A. Secure any fire pump(s) that auto started
- B. Locally acknowledge the fire alarm at Zone 31
- C. Reset the fire alarm siren in the Main Control Room
- D. Go to "BYPASS" on Zone 31 at Fire Detection Panel 121

*ANSWER D

- *REFERENCES
1. Alarm Response Procedure C47022, Annunciator Location 47022-0611
 2. B31B, "Fire Detection System", pages 7 and 8, and Figure B31B-8
 3. F5, "Fire Fighting", pages 4 and 10

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000069W/E14 EA2.2 [3.3, 3.8]

*Concurred.
Comment incorporated.
M/2/92*

*QUESTION

FR-Z.1, RESPONSE TO HIGH CONTAINMENT PRESSURE, has been entered.

What is the minimum required Cooling Water System pressure and the reason for the lower limit?

in Loop A and B

Add to be more specific

- A. >46 psig, to ensure that containment leakage can NOT occur from the FCUs through the Cooling Water System
- B. >65 psig, to provide the necessary flow to the FCUs to remove the design heat load from the containment
- C. >46 psig, to provide the necessary flow to the FCUs to remove the design heat load from the containment
- D. >65 psig, to ensure that containment leakage can NOT occur from the FCUs through the Cooling Water System

*ANSWER B

*REFERENCE FR-Z.1, RESPONSE TO HIGH CONTAINMENT PRESSURE, step 4 and Background Information for step 4

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000074W/E06 &E07 G2.4.6[3.1, 4.0]

*QUESTION

A small break LOCA has occurred.

- No SI pump or RHR pump is running
- Core Exit TCs are at 1240°F
- The operators are responding in accordance with the appropriate procedure

Which of the following lists the major recovery actions in the correct sequence for the condition specified assuming that Core Exit TCs remain greater than 1200°F?

- A. Start ECCS pumps, depressurize SGs, start RCPs, open RCS vent paths
- B. Depressurize SGs, start ECCS pumps, open RCS vent paths, start RCPs
- C. Start ECCS pumps, open RCS vent paths, depressurize SGs, start RCPs
- D. Depressurize SGs, open RCS vent paths, start RCPs, start ECCS pumps

*ANSWER A

- *REFERENCES
1. P8197L-014, "F/FR Review", Enabling Objective 11 and pages 20 and 21
 2. FR-C.1, RESPONSE TO INADEQUATE CORE COOLING

Direct/New/Modified: **Direct**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 0000076AK2.01 [2.6, 3.0]

*Concurred.
(Comment incorporated.)
N. Valdez*

*QUESTION

Which of the following Unit 1 radiation monitor(s) is/are specifically used to obtain data to indicate fuel damage during a Steam Generator Tube Rupture?

- fully dip tested*
- A. 1R-11 and 1R-12 Containment Particulate and Gas Monitors
 - B. 1R-15 Condenser Air Ejector Gas Monitor
 - C. 1R-19 Steam Generator Blowdown Monitor
 - D. 1R-51 and 1R-52 Main Steam Loop Rad Monitors

*ANSWER D

- *REFERENCES
- 1. Lesson Plan P8182L-002, "Radiation Monitoring System", Enabling Objective 1 and pages 10, 11, 12, 17, 19, and 28
 - 2. B11, "Radiation Monitoring System", pages 4, 10, 12, 13 and 26

Direct/New/Modified: **New**

Tier/Group: 1/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000001G2.4.4 [4.0, 4.3]

*QUESTION

The following plant conditions exist on Unit 1:

- Reactor power is 75% and increasing
- PRZR pressure is 2240 psig and slowly increasing
- PRZR level is 31% and increasing
- Tave is 558°F and increasing
- Containment parameters are normal

What event is occurring?

- A. Turbine stop valve closure
- B. Inadvertent AFW actuation
- C. Loop A Tave circuit drifting high
- D. Control Bank D continuous rod withdrawal

*ANSWER D

*REFERENCE 1C5 AOP1, "Uncontrolled Withdrawal of an RCCA", Section 2.1

Direct/New/Modified: **Direct**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000003AK1.16 [2.9, 3.2]

Problem with this is the dropped rod
worths may not be well predicted by
DEV/IRW.

By making reactivity equally focuses
questions on MDC (power defect change
is 0 if specify reactivity points).

Concerned.
Comments incorporated.
M. Valer

*QUESTION

Unit 1 rod control is in MANUAL with Control Bank D at 200 steps with equilibrium xenon and
boron control in MANUAL.

Which of the following plant conditions would result in the largest decrease in Tave for a
dropped control rod in Control Bank D (assume no operator action and assume that power
distribution is initially the same relative shape)?

(NOTE: Figures C1-4A, 7A, and 12A are attached for reference)

the same dropped rod
reactivity insertion and
reactor remains at power.

- A. Beginning of life with reactor power at 20%.
- B. End of life with reactor power at 20%.
- C. Beginning of life with reactor power at 90%.
- D. End of life with reactor power at 90%.

*ANSWER A

- *REFERENCES
- 1. Fig C1-4A, "Differential & Integral Rod Bank Worth"
 - 1. 2. Fig C1-7A, "Total Power Defect VS Percent Power Unit 1 Cycle 21"
 - 2. 3. Fig C1-12A, "Isothermal Temperature Coefficients Hot Zero Power-All Rods Out-Eq Xenon"

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **4**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 000008AK2.02 [2.7, 2.7]

*QUESTION

Unit 1 is in Hot Shutdown at full RCS temperature and pressure. A stuck open Pressurizer safety valve will result in the following Main Control Board indications:

	<u>PRZR Level</u>	<u>Alarm</u>
A.	Increasing	PRZR RELIEF TANK HI TEMP/LVL/PRESS OR LO LVL
B.	Decreasing	PRZR SAFETY VALVE LINE A OR B HI TEMP
C.	Increasing	PRZR LIQUID/VAPOR HI TEMP
D.	Decreasing	PRZR SURGE LINE LO TEMP

*ANSWER A

*REFERENCES 1. Lesson Plan P8197L-012, "E-1/E-2 Review",
 Enabling Objective 24 and page 40
 2. Alarm Response Procedure C47012, Annunciator Locations
 47012-0308, 47012-0406, 47012-0409, and 47012-0606

Direct/New/Modified: **Modified**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000009EK3.28 [4.5, 4.5]

*QUESTION

The ~~Folder~~ Page for E-1, LOSS OF REACTOR OR SECONDARY COOLANT, has SI REINITIATION CRITERIA.

Which ONE of the following describes the appropriate actions for this criteria?

- A. If PRZR level or RCS subcooling cannot be maintained, start SI pumps as necessary.
- B. If PRZR level or RCS subcooling cannot be maintained, MANUALLY actuate Safety Injection using manual "Safety Injection" switch(es).
- C. If PRZR pressure or RCS subcooling cannot be maintained, start SI pumps as necessary.
- D. If PRZR pressure or RCS subcooling cannot be maintained, MANUALLY actuate Safety Injection using manual "Safety Injection" switch(es) .

*ANSWER A

*REFERENCE Information Page for E-1 Procedure

Direct/New/Modified: **Direct**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*Concurred
Comment incorporated.
M. G. G.*

*Use Prairie Island
Information*

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA W/E04 **EA1.3** [3.8, 4.0]

*QUESTION

What indication is used in ECA-1.2, LOCA OUTSIDE CONTAINMENT, to verify that the actions taken in the procedure have isolated the break?

- A. RCS pressure increasing
- B. Containment Sump B level increasing
- C. Auxiliary Building radiation decreasing
- D. RHR pump discharge pressure increasing

*ANSWER A

- *REFERENCES
- 1. ECA-1.2, LOCA OUTSIDE CONTAINMENT, step 2 and Background Information for step 2
 - 2. Lesson Plan P8197L-012, "E-1/E-2 Review", Enabling Objectives 5 and 10

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA W/E03 EA2.2 [3.5, 4.1]

*QUESTION

The following conditions exist on Unit 1:

- Unit 1 has tripped from 100% power due to a small break LOCA
- SI has actuated and all equipment is operating properly
- SI flow is 300 gpm
- Containment pressure is 3 psig
- Containment radiation is 100 R/hour
- RCS pressure is at 1600 psig
- RCS temperature is at 530°F and stable
- ES-1.1, POST LOCA COOLDOWN AND DEPRESSURIZATION has just been entered, and step 2 to stop the RHR pumps was just completed

Which of the following by itself would require tripping of both RCPs?

- A. PRZR level decreases to 7%
- B. RCS subcooling decreases to 50°F
- C. RCS pressure decreases to 1100 psig
- D. Containment pressure increases to 23 psig

*ANSWER C

*REFERENCES

1. ES-1.1, POST LOCA COOLDOWN AND DEPRESSURIZATION
2. Information Page for ES-1.1 Procedure
3. Lesson Plan P8197L-012, "E-1/E-2 Review",
Enabling Objective 19

Direct/New/Modified: **Modified**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA W/E11 G 2.1.2 [3.0, 4.0]

*QUESTION

A small break LOCA has occurred. ECA-1.1, LOSS OF EMERGENCY COOLANT RECIRCULATION is in effect.

- RWST level is at 48%.
- 4 Containment FCUs are running in Safeguards Mode.
- Both CS pumps have been stopped per ECA-1.1.
- Containment pressure has now increased from 17 psig to 23 psig, and a transition to FR-Z.1, RESPONSE TO HIGH CONTAINMENT PRESSURE has occurred.

Regarding the CS pumps:

- A. Only one CS pump should be started to balance RWST water conservation with CS requirements.
- B. The CS pumps should be left NOT running because ECA-1.1 takes priority over FR-Z.1 in regards to CS pump operation.
- C. Both CS pumps should be started and run until RWST level reaches the Recirculation Switchover Criterion and then stopped.
- D. The CS pumps should be left NOT running because ECA procedures have priority over FR procedures when a conflict in instructions occurs.

*ANSWER

- *REFERENCES
1. ECA-1.1, LOSS OF EMERGENCY COOLANT RECIRCULATION, step 7
 2. FR-Z.1, RESPONSE TO HIGH CONTAINMENT PRESSURE, CAUTION before step 2

Direct/New/Modified: **Modified**

Tier/Group: 1/2

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

Looks like CS pumps will start at 23 psig then to.

Problem is CS automatic Reset to original bank question.

Concerned with comment. Replaced this question with original bank question. M. V. L.

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000022AK1.01 [2.8, 3.2]

*QUESTION

What is the reason for closing the RCP seal injection throttle valves during a loss of all AC power?

- A. To prevent runout of a charging pump when a charging pump is started following power restoration.
- B. The RCP seals and shafts may be damaged due to thermal shock when a charging pump is started following power restoration.
- C. To prevent steam binding of the charging pumps due to RCP seal leakoff flashing to steam when a charging pump is started following power restoration.
- D. The RCP thermal barrier heat exchangers may rupture due to thermal shock and water hammer when a charging pump is started following power restoration.

*ANSWER B

*REFERENCES 1. Lesson Plan P8197L-011, "E-0 Review", Enabling Objective 20
 2. ECA-0.0, LOSS OF ALL SAFEGUARDS AC POWER, step 17 and Background Information for step 17

Direct/New/Modified: **Direct**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000025AK2.01 [2.9, 2.9]
*QUESTION

Concurred
Comment incorporated
JL 6/2/00

How can RHR shutdown cooling be lost during a loss of instrument air event?

- A. The RHR heat exchanger outlet flow control valves and the RHR heat exchanger bypass valve will fail open which could cause high or fluctuating RHR pump motor current and require the running RHR pump(s) to be shutdown
- B. The RHR heat exchanger outlet flow control valves will fail open which could cause RHR pump discharge pressure fluctuations due to cavitation at high flow conditions and require the running RHR pump(s) to be shutdown
- C. The RHR heat exchanger outlet flow control valves will fail closed ^{and the RHR heat exchanger bypass valve} ~~and the RHR heat exchanger bypass valve will fail open~~ which would cause loss of RHR shutdown cooling
- D. Component cooling would be lost to the RHR heat exchangers resulting in a loss of RHR shutdown cooling

Some indication is acceptable for a short period of time

Change to be opposite that of Answer A

*ANSWER B

- *REFERENCES
1. Lesson Plan P8180L-003, "Residual Heat Removal", pages 25, 26, and 27
 2. C34 AOP1, "Loss of Instrument Air", pages 13, 14, and 15
 3. 1C15 AOP3, "RHR Operation Without Control Room Instrumentation or Flow Control", Section 2.1 "Symptoms"

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 000033AK3.01 [3.2, 3.6]

IR inoperability TS 3.5-2A #5 action 3:
 If $< P-6$ reduce power to going above P-6.
 If $> P-6$ but $< P-10$, reduce power
 to going above P-10.
 So, if $> P-6$ would not have to
 suspend startup; P-10 setpoint is 10% power

Concurred.
 Comments incorporated.
 H. H. H.

*QUESTION
 A reactor startup is in progress with power at 5×10^{-4} AMPS in the intermediate range.
 Why is reactor startup ^{suspended} terminated if an Intermediate Range (IR) channel becomes inoperable?

- A. The IR channels provide dropped rod protection during startup.
- B. The IR channels provide protection for excessive fuel rod power density during startup.
- C. The IR channels provide protection against DNB for a rapid reactivity addition during startup.
- D. The IR channels provide protection for positive reactivity addition accidents during startup.

*ANSWER D

- *REFERENCES
- 1. B8, "Reactor Protection System", Table B8-1
 - 2. B9A, "Nuclear Instrumentation System", page 27
 - 3. Lesson Plan P8184L-004, "Reactor Protection",
Enabling Objective 6 and pages 17, 18, 19, 21, 22, and 23
 - 4. Lesson Plan P8184L-002, "Nuclear Instrumentation System",
page 21

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000037AA1.11 [3.4, 3.3]
*QUESTION

*Concerned.
Comments incorporated.
N/A for*

The following plant conditions exist on Unit 1:

- The plant was stable with Reactor Power at 100% and all control systems in normal lineup
- 1C4 AOP2, "Steam Generator Tube Leak" was then entered due to increased radiation levels on 1R-15, "Condenser Air Ejector Gas Monitor"
- The appropriate response actions for RCS inventory control with a SG tube leak have been taken

Which of the following conditions would require an ^{fully expected} immediate manual Reactor Trip for this SG tube leak?

- A. SG tube leakage is determined to be 550 GPD based on chemistry results
- B. PRZR level continues to slowly decrease with charging flow maximized and letdown isolated
- C. SG tube leakage rate of change is determined to be 100 GPD/hour for the last 15 minutes based on 1R-15, "Condenser Air Ejector Gas Monitor"
- D. 1R-15, "Condenser Air Ejector Gas Monitor" indication increased by 1000 CPM over the last 15 minutes with indications of increasing activity on 1R-51 ^{add a space} "11 Main Steam Loop Rad Monitor"

*ANSWER B

*REFERENCES 1. 1C4 AOP2, "Steam Generator Tube Leak", step 2.4.1
2. Lesson Plan P8197L-13A, "E-3 Series Review",
Enabling Objective 1 and pages 19, 20, 24, and 25

Direct/New/Modified: **Modified**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000038EA2.13 [3.1,3.1]

*Concerned.
Comment incorporated.
M.A. Lee*

*QUESTION

The following plant conditions exist on Unit 2:

- A SGTR has occurred on Unit 2
- Safety Injection was manually actuated
- PRZR level initially recovered following the Safety Injection, but PRZR level is now decreasing
- SI flow is 100 gpm
- Charging flow is 90 gpm
- RCP seal injection flow to each RCP is 8 gpm

What is an estimate of the magnitude of the SGTR at this time? *Disregard contribution of RCP seal leakage.*

- A. Less than 190 gpm
- B. Equal to 190 gpm
- C. Equal to 206 gpm
- D. Greater than 206 gpm

*Seal return relief
will be lifting*

*ANSWER D

- *REFERENCES
1. Lesson Plan P8197L-013, "E-3 Series Review", Enabling Objective 3
 2. Flow Diagram X-HIAW-1-39, "Chemical & Volume Control System"

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA W/E05 G2.4.4 [4.0, 4.3]

*Concurred.
Comments incorporated.
N. Valdez*

*QUESTION

change to be more specific

Which ONE of the following conditions would ~~give an indication of a loss of secondary heat sink?~~ *result in a RED path on the Heat Sink CSF?*

- A. SG A and SG B WR levels are at 40%, total available feedwater flow is 150 GPM.
- B. No AFW pump or feedwater flow available, SG A WR level is at 40%, SG B is ruptured with WR level at 60%.
- C. SG A WR level is at 40%, SG B is ruptured with WR level at 45%, with AFW flow of 120 GPM to each SG.
- D. SG A is faulted with WR level at 0% with feedwater and AFW isolated, SG B WR level at 40% with AFW flow to SG B at 250 GPM.

*ANSWER A

- *REFERENCES
- 1. F-0.3, HEAT SINK critical safety function status tree
 - 2. FR-H.1, RESPONSE TO LOSS OF SECONDARY HEAT SINK, CAUTION before step 1
 - 3. *Information Cys Red Path Summary.*

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL R
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 000059AK1.01 [2.7, 3.1]

Concurred.
 Comments incorporated.
 M. Baker

*QUESTION

What type of release would be expected during an accidental spill of radioactive liquid from the tank listed?

<u>Tank</u>	<u>Type of Release from Tank</u>
A. Non-Aerated Sump Tank	Dissolved fission gases (may be high levels), mostly beta-gamma radiation
B. Waste Holdup Tank	Low levels of dissolved fission gases, mostly delayed neutron and alpha radiation
C. Volume Control Tank <i>AD Tank frequently held. Could have in SGB tube leak</i>	Dissolved fission gases (may be high levels), mostly delayed neutron and alpha radiation
D. SGB Holdup Tank <i>Reactor Makeup Tank</i>	Low levels of dissolved fission gases, mostly beta-gamma radiation

*ANSWER A

*REFERENCES 1. B21B, "Liquid Waste System", pages 3 and 4 and Figure B21B-01
 2. Lesson Plan P8182L-001A, "Radioactive Waste Liquid", pages 8 and 9
 3. Lesson Plan P8154L-056, "Fission Process", pages 12, 13, and 14

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000060AK2.02 [2.7, 3.1]

*Concurred.
Comments incorporated
M. Valdez*

*QUESTION

A gas leak from a pressure tap for the Unit 1 Volume Control Tank has caused radiation monitor 1R30, "~~Unit 1~~ Aux Bldg Vent Gas Monitor" to alarm.

What effect will this have on the ventilation exhaust from the Auxiliary Building?

- A. - The 11 and 21 Auxiliary Building Exhaust Fans will stop
- The 122 Auxiliary Building Special Exhaust Fan will start
- B. - The 11 Auxiliary Building Exhaust Fan will stop
- The 121 Auxiliary Building Special Exhaust Fan will start
- C. - The 11 and 21 Auxiliary Building Exhaust Fans will stop
- The 121 Auxiliary Building Special Exhaust Fan will start
- D. - The 21 Auxiliary Building Exhaust Fan will stop
- The 122 Auxiliary Building Special Exhaust Fan will start

Switch these around since AB Special Exhaust Fan starts which trips AB normal

*ANSWER A

*REFERENCE Alarm Response Procedure C47048, Annunciator Location 47048 1R-30

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000061AK3.02 [3.4, 3.6]

*QUESTION

The following plant conditions exist on Unit 2:

- Unit 2 is at 100% power with all systems in normal lineup
- Annunciator "REACTOR COOLANT LETDOWN LINE AREA MONITOR" has alarmed
- The radiation level indication on 2R-9, "Letdown Line Radiation Monitor" is 15 R/HR which has been confirmed by portable monitoring equipment

For this situation, what guidance is provided and the reason for the guidance?

- A. Letdown is isolated and excess letdown is placed in service to minimize the radiation hazard.
- B. The standby Mixed Bed Demineralizer is placed in service because the in-service Mixed Bed Demineralizer is exhausted.
- C. Letdown is isolated to minimize the radiation hazard because of an indication of fuel damage.
- D. The Cation Bed Demineralizer is placed in service because of the need to remove fission products such as cesium and molybdenum.

*ANSWER C

- *REFERENCES
- 1. Alarm Response Procedure C47048, Annunciator Location 47048 1R-09
 - 2. Lesson Plan P8182L-002, "Radiation Monitoring System", Enabling Objective 1 and pages 22 and 23
 - 3. C12.1, "Letdown, Charging, and Seal Water Injection", Limitation 4.8
 - 4. C12.1 AOP4, "Alternate Letdown Flowpaths", Section 2.4.3
 - 5. B11, "Radiation Monitoring System", page 18
 - 6. B12A, "Chemical and Volume Control", page 11

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA **W/E16** EA1.3 [2.9, 3.3]

*QUESTION

The following plant conditions exist on Unit 2:

- A LOCA has occurred on Unit 2
- The YELLOW path procedure FR-Z.3, RESPONSE TO HIGH CONTAINMENT RADIATION is being implemented
- Containment pressure is 3 psig

Which ONE of the following actions is necessary to reduce containment radiation levels?

- A. Place Containment Spray System in service.
- B. Place Containment Cleanup System in service.
- C. Place Containment Fan Coil Units to FAST speed.
- D. Place Containment In-Service Purge System in service.

*ANSWER B

*REFERENCES 1. FR-Z.3, RESPONSE TO CONTAINMENT HIGH RADIATION, step 2 and Background Information for step 2
2. Lesson Plan P8197L-014, "F/FR Review", page 38

Direct/New/Modified: **New**

Tier/Group: 1/2

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 000065 G 2.4.2 [3.9, 4.1]

*QUESTION

Due to an air line break, Unit 1 instrument air header pressure is decreasing with no immediate hope of recovery.

Which of the following criteria BY ITSELF should be used to determine the requirement to initiate a Reactor Trip?

- A. PRZR spray valves failing closed.
- B. Loss of seal injection flowpath to RCPs.
- C. Proximity of steam generator level to the trip setpoint and its rate of decrease.
- D. Charging pump speed failing to minimum with loss of normal charging flowpath and loss of letdown capability.

*ANSWER C

*REFERENCE C34 AOP1, "Loss of Instrument Air", Attachment A, item 10.A

Direct/New/Modified: **Direct**

Tier/Group: 1/3

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA W/E13 **EK1.2** [3.0, 3.3]

*QUESTION

Why is steam not released from a SG in FR-H.2, RESPONSE TO STEAM GENERATOR OVERPRESSURE, if NR level is greater than 90% [WR greater than 71%]?

- A. The high SG water level may be due to a SGTR, and releasing steam may cause an uncontrolled/unmonitored radiation release.
- B. Releasing steam may cause a rapid drop in RCS temperature and pressure, potentially resulting in a Safety Injection.
- C. Feedwater would have already been isolated, and SG pressure will thus slowly decrease due to ambient losses.
- D. Releasing steam may result in two phase flow and water hammer, potentially damaging pipes and valves.

*ANSWER D

*REFERENCES

1. Lesson Plan P8197L-014, "F/FR Review", page 31
2. FR-H.2, RESPONSE TO STEAM GENERATOR OVERPRESSURE, Background Information for CAUTION preceding step 4

Direct/New/Modified: **Direct**

Tier/Group: 1/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA W/E15 EK2.1 [2.8, 2.9]

*QUESTION

The major concern associated with containment flooding during the implementation of the EOPs is:

- A. the indications of containment flooding could mean that water is being collected in an area of containment such that transfer to the recirculation phase will NOT be possible.
- B. water on the external surface of the reactor vessel could result in Pressurized Thermal Shock and subsequent rupture of the reactor vessel.
- C. dilution of the water in the containment sump which could result in a criticality event when transferring to the recirculation phase.
- D. containment flooding could affect critical systems and components needed for long-term cooling.

*ANSWER D

- *REFERENCES
- 1. Background Information for 1F-0.5, "Containment Status Tree"
 - 2. Background Information for 1FR-Z.2, RESPONSE TO HIGH SUMP B LEVEL
 - 3. Lesson Plan P8197L-014, "F/FR Review", page 37

Direct/New/Modified: **New**

Tier/Group: 1/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 001000K1.04 [3.2, 3.4]

*QUESTION

The worst case rupture of a control rod drive mechanism housing would result in which of the following events?

- A. A small break LOCA
- B. An RCCA rod ejection WITH a small break LOCA
- C. An RCS leak WITHIN the capability of available charging pumps
- D. An RCCA rod ejection WITH an RCS leak WITHIN the capability of available charging pumps

*ANSWER B

- *REFERENCES
- 1. Lesson Plan P8186L-002, "USAR Review", pages 8 and 9
 - 2. Lesson Plan P8197L-002, "E-1/E-2 Review",
Enabling Objective 17 and pages 38 and 39
 - 3. USAR Section 14.5.6.1 and Figure 3.5-1

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 001000K4.07 [3.7, 3.8]

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 100% power.
- Control rods are in AUTOMATIC control.

WHICH ONE of the following will prevent automatic OUTWARD movement of Control Bank D rods?

- A. Turbine Impulse pressure channel (PT-485) fails to 0 psig.
- B. Two (2) highest NIs indicate 102% power.
- C. Control Bank D rods are at 210 steps.
- D. Loop B Thot fails to 620°F.

*ANSWER A

*REFERENCE Lesson Plan P8184L-005, "Rod Control & Rod Position Indication",
Enabling Objective 2

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 003000K2.02 [2.5, 2.6]

*QUESTION

Which of the following will result in a loss of #21 CC Pump?

Loss of bus:

- A. 24
- B. 25
- C. 26
- D. 27

*ANSWER B

*REFERENCES

1. Lesson Plan P8172L-002, "Component Cooling",
Enabling Objective 3
2. B14, "Component Cooling System", page 5
3. Electrical Print NF-40022-2, "Circuit Diagram 4KV and 480V
Safeguards Busses Unit 2"

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL R
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 003000K5.04 [3.2, 3.5]

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 8% power.
- The turbine at 1800 RPM.
- The shift is making preparations to synchronize the generator to the grid.
- All systems are in their normal alignment for the current plant status.

The 11 RCP trips and AMSAC/DSS fails to actuate. What is the expected trend of the following parameters assuming no operator action?

	<u>SG A Pressure</u>	<u>Loop A Steam Flow</u>	<u>Loop B Steam Flow</u>
A.	Decreases	Decreases	Decreases
B.	Increases	Decreases	Increases
C.	Decreases	Increases	Decreases
D.	Decreases	Decreases	Increases

*ANSWER D

*REFERENCE Lesson Plan P8170L-002, "Reactor Coolant Pumps",
 Enabling Objective 12 and pages 23,24

Direct/New/Modified: **Modified**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 004000K3.08 [3.6, 3.8]

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 90% power.
- All systems are in normal at power condition.

The instrument air line to CV-31198, "Charging Line Flow Control Valve" has just broken loose.

What would be the effect on the following flows as a result of this failure?

	<u>RCP Seal Injection Flows</u>	<u>Charging Flow</u>
A.	Decrease	Increases
B.	Increase	Decreases
C.	Decrease	Decreases
D.	Increase	Increases

*ANSWER A

- *REFERENCES
1. Lesson Plan P8172L-001a, "CVCS", Enabling Objective 5 and page 37
 2. C12.1 AOP1, "Loss of Seal Injection", step 2.4.3
 3. Flow Diagram X-HIAW-1-39, "Chemical & Volume Control System"

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 004000K6.13 [3.1, 3.3]

*QUESTION

Given the following plant conditions on Unit 1 and a copy of Figure B12A-3:

- A dilution of the RCS has just been initiated
- The Reactor Makeup Mode Selector Switch is in the "ALTERNATE DILUTE" position
- The annunciator "REACTOR MAKEUP FLOW CONTROLLER DEVIATION" has alarmed

Which of the following automatic actions (if any) will occur if the alarm condition does not clear (assume no operator action to clear alarm)?

- A. No automatic actions (alarm only)
- B. CV-31200 and CV-31201 close
- C. CV-31200 closes
- D. CV-31206 closes

*ANSWER B

- *REFERENCES
1. B12A, "Chemical and Volume Control", pages 16, 17, 18, and Figure B12A-3
 2. Alarm Response Procedure C47015, Annunciator Location 47015-0404
 3. Lesson Plan P8172L-001a, "CVCS", Enabling Objective 3 and pages 28 through 31

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 013000K4.13 [3.7, 3.9]

*QUESTION

Which ONE of the following conditions must be met to allow opening the Feedwater Control Bypass Valves after a Reactor Trip (with no SI) on Hi Hi SG Narrow Range level? SG NR levels are now at 33% and Tave is at 538°F.

- A. Containment isolation must be reset.
- B. Tave must be increased to above 554°F.
- C. The reactor trip breakers must be at least momentarily re-closed.
- D. The Train A and Train B isolation reset pushbuttons for the valves must be reset.

*ANSWER D

- *REFERENCES
1. Lesson Plan P8180L-006, "Engineered Safeguards System", pages 29,30
 2. Lesson Plan P8174L-003, 'Condensate and Feedwater', page 26

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 013000A1.06 [3.6, 3.9]

*QUESTION

The following plant conditions exist on Unit 1:

- A large break LOCA has occurred
- The 11 RHR Pump is out of service

At what RWST level may the 12 RHR Pump be stopped to align the train for recirculation, and at what RWST level are the remaining pumps taking suction on the RWST stopped?

	<u>RWST At Which 12 RHR Pump Is Stopped</u>	<u>RWST Level When Remaining Pumps Stopped</u>
A.	33%	4%
B.	28%	4%
C.	33%	8%
D.	28%	8%

*ANSWER D

- *REFERENCES
1. ES-1.3, TRANSFER TO RECIRCULATION WITH ONE SAFEGUARD TRAIN OUT OF SERVICE, steps 1,2, 19, and 20
 2. Information Page For E-1 Procedure
 3. ES-1.2, TRANSFER TO RECIRCULATION, step 4

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 015000K2.01 [3.3, 3.7]

*QUESTION

Which of the following channels will be operable on a loss of Instrument Bus 112 (assume all NIS channels were operable prior to the loss of Instrument Bus 112)?

- A. Source Range N31, Intermediate Range N35, Power Ranges N41, N43, and N44
- B. Source Range N31, Intermediate Range N35, Power Ranges N42, N43, and N44
- C. Source Range N32, Intermediate Range N36, Power Ranges N41, N43, and N44
- D. Source Range N32, Intermediate Range N36, Power Ranges N42, N43, and N44

*ANSWER D

- *REFERENCES
- 1. Lesson Plan P8184L-002, "Nuclear Instrumentation System", Enabling Objective 6 and pages 14, 22, and 30
 - 2. Instrument Failure Guides 1C51.1, 1C51.2, 1C51.3, and 1C51.4

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 015000K5.02 [2.7, 2.9]

*QUESTION

Following a reactor shutdown, an undercompensated intermediate range channel can be identified by _____ (1) _____ which would _____ (2) _____.
(Fill in the blanks)

(1)

(2)

- | | | |
|----|-------------------------------|--|
| A. | Lower than normal indication | automatically re-energize the source range detectors early |
| B. | Lower than normal indication | require manually re-energizing the source range detectors |
| C. | Higher than normal indication | automatically re-energize the source range detectors early |
| D. | Higher than normal indication | require manually re-energizing the source range detectors |

*ANSWER D

*REFERENCE Lesson Plan P8184L-002, "Nuclear Instrumentation System",
Enabling Objective 16 and pages 44 and 45

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 017000K6.01 [2.7, 3.0]

*QUESTION

Which ONE of the following describes the effects on the Incore Thermocouple Control Panel when a thermocouple with an open circuit is selected?

- A. The display is blank
- B. The display shows 2500°F
- C. The display shows four E's (EEEE)
- D. The display shows four dashes (----

*ANSWER D

*REFERENCE B10, "Incore Instrumentation System", page 18 and Figure B10-15

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

Replace this question.
Equipment is not in Control Room.
Equipment is in Event Monitoring Room.
Site will propose question based
on indications available in
Control Room.

Concerned
Replaced this question
with new question.
M. Valer

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 022000A1.01 [3.6, 3.7]

*QUESTION

In order to maintain containment temperature within limits during normal power operation (with all systems in normal operation), what is the MINIMUM number of Fan Coil Units necessary to be in operation?

- A. 1
- B. 2
- C. 3
- D. 4

*ANSWER B

- *REFERENCES
1. Lesson Plan P8180L-009H, "Safeguards Ventilation: Containment Air Handling System", pages 10, 26, and 29
 2. 1C19.2, "Containment System Ventilation Unit 1", Limitation 4.4 and Section 5.6.2
 3. Technical Specification Bases page B3.3-3

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 056000A2.04 [2.6, 2.8]

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 75% power
- The 11 and 12 Condensate Pumps are running
- The 13 Condensate Pump is in STANDBY
- The 11 and 12 Heater Drain Pumps are running
- The 13 Heater Drain Tank Pump is in STANDBY

The following alarms are then received in the Main Control Room:

- "11 CONDENSATE PUMP LOCKED OUT"
- "COND B-P FEEDWATER PUMP OPEN"

What plant response is expected and what action should be taken by the Control Room Operator?

- A.
 - The 13 Condensate Pump will start
 - The Condensate Bypass Valve to FW Pumps will OPEN
 - Reduce load as necessary (using either 1C1.4, "Unit 1 Power Operation" or 1C1.4 AOP1, "Rapid Power Reduction Unit 1") to ensure adequate SG level can be maintained
- B.
 - Reactor will trip
 - The 12 Condensate Pump will trip
 - Go to E-0, REACTOR TRIP OR SAFETY INJECTION
- C.
 - The 13 Condensate Pump will start
 - The Condensate Bypass Valve to FW Pumps will OPEN and then CLOSE
 - No Operator action will be required
- D.
 - The 13 Heater Drain Tank Pump will start
 - The Heater Drain Pump Condensate Injection Valve will OPEN
 - Reduce load as necessary (using either 1C1.4, "Unit 1 Power Operation" or 1C1.4 AOP1, "Rapid Power Reduction Unit 1") to ensure adequate SG level can be maintained

*ANSWER A

- *REFERENCES
1. Alarm Response Procedure C47010, Annunciator Location 47010-0602
 2. Alarm Response Procedure C47009, Annunciator Location 47009-010
 3. Lesson Plan P8174L-003, "Condensate and Feedwater", Enabling Objective 6 and pages 10, 19, 24, 25, and 37
 4. Lesson Plan P8174L-004, "Heater Drains", pages 14 and 23
 5. 1C1.4, "Unit 1 Power Operation", page 3
 6. 1C1.4 AOP1, "Rapid Power Reduction Unit 1, page 3

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 059000A1.03 [2.7, 2.9]

*QUESTION

Which of the following is the highest

What is the maximum power allowed if two condensate pumps and one feedwater pump are in service on Unit 2?

- A. ~~270 MWe~~ 50%
B. ~~300 MWe~~ 55%
C. ~~330 MWe~~ 60%
D. ~~360 MWe~~ 65%

limit in procedure
given in % power.

Concurred.
Comments
incorporated.
N. Valer

*ANSWER C

- *REFERENCES
1. Lesson Plan P8174L-003, "Condensate and Feedwater", Enabling Objective 8
 2. 2C28.2, "Unit 2 Feedwater System", Limitation 4.1

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 059000A3.06 [3.2, 3.3]
 *QUESTION

Concurred.
 Comment incorporated.
 N Valer

A spurious reactor trip with no SI has just occurred on Unit 1 from 100% power. The following conditions exist:

- Tave has stabilized at 549°F
- Narrow Range SG levels have been recovered from below normal range and presently are at the following values:
 - SG A 60%
 - SG B 44%

What is the expected status of the Main Feedwater Control Valves and the Feedwater Bypass Control Valves?

	<u>Main FW Control Valves</u>	<u>FW Bypass Control Valves</u>
A.	OPEN	CLOSED
B.	CLOSED	CLOSED
C.	OPEN	OPEN
D.	CLOSED	OPEN

*ANSWER

D B

Above setpoint (33%) and Bypass FRV's normally in MANUAL and CLOSED per ICI. 4 above 40% power

*REFERENCE

B28A, "Condensate and Feedwater System", pages 11 and 12

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 061000K4.07 [3.1, 3.3]

***QUESTION**

If the speed of the Turbine-Driven Auxiliary Feedwater Pump becomes excessive, then:

- A. A mechanical flyweight assembly unlatches the trip hook on the turbine trip/throttle valve
- B. A mechanical flyweight assembly unlatches the trip hook on the turbine governor valve
- C. A signal is sent from the Woodward governor to unlatch the trip hook on the turbine trip/throttle valve
- D. A signal is sent from the Woodward governor to unlatch the trip hook on the turbine governor valve

***ANSWER A**

- *REFERENCES**
- 1. Lesson Plan P8180L-007, "Auxiliary Feedwater System", Enabling Objective 3 and pages 15 and 25
 - 2. 1C28.1, "Auxiliary Feedwater System Unit 1", Attachment C
 - 3. B28B, "Auxiliary Feedwater System", pages 8 and 10

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 061000A2.05 [3.1, 3.4]
 *QUESTION

The following plant conditions exist on Unit 1:

- A small break LOCA has occurred and ES-1.1 is in effect for post LOCA cooldown
- SG Wide Range Levels are at 45%
- The 11 TD AFWP and the 12 MD AFWP are running with the Control Board selector switches in "AUTO"
- SG pressures are at 500 psig

What would be the impact on the AFW pumps (if any) if AFW discharge header pressure decreased to a sustained 600 psig, and what procedure(s) (if any) would be REQUIRED to be used to mitigate the consequences?

	<u>Effect on the AFW Pumps</u>	<u>Procedure(s) Used To Mitigate Consequences</u>
A.	NO effect. BOTH the 11 TD AFWP and the 12 MD AFWP would continue to run	No procedures required to be used
B.	ONLY the 11 TD AFWP would trip	Use Alarm Response Procedure associated with the 11 TD AFWP trip <u>AND</u> use C28.1 AOP4 to restart the AFWP
C.	ONLY the 12 MD AFWP would trip	Use Alarm Response Procedure associated with the 12 MD AFWP trip <u>AND</u> use C28.1 AOP4 to restart the pump
D.	BOTH the 11 TD AFWP and the 12 MD AFWP would trip	<u>ONLY</u> use Alarm Response Procedures associated with the trips of the AFWPs

*ANSWER D

- *REFERENCES
1. Alarm Response Procedure C47010, Annunciator Locations 47010-0107 and 47010-0205
 2. Lesson Plan P8180L-007, "Auxiliary Feedwater System", Enabling Objective 4 and pages 19, 20, 22, and 24
 3. C28.1 AOP4, "Restarting an AFWP After Low Suction / Discharge Pressure Trip", page 3
 4. 1C28.1, "Auxiliary Feedwater System Unit 1", Sections 5.11 and 5.12
 5. F-0.3, HEAT SINK

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **4**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 068000K1.02 [2.5, 2.6]

*QUESTION

Which ONE of the following tanks is vented to the Plant Vent Header of the Waste Gas System?

- A. CVCS Holdup Tank
- B. Waste Holdup Tank
- C. ADT Collection Tank
- D. Misc Drain Collection Tank

*ANSWER A

- *REFERENCES
1. Lesson Plan P8182L-001C, "Rad Waste - Waste Gas", Enabling Objectives 4 and 8 and pages 13 and 14
 2. Lesson Plan P8182L-001A, "Radioactive Waste Liquid ", Pages 14, 16, 32, 33 , and 34
 3. B21A, "Waste Gas System", pages 3 and 4, and Figure B21A-02

Direct/New/Modified: **New**
Tier/Group: 2/1
Level of Difficulty (1 - 5): **3**
Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 068000A3.02 [3.6, 3.6]

*Concurred.
Comments incorporated.
N. Valon*

*QUESTION

Which of the following monitors provides an automatic isolation function if a HIGH alarm condition exists?

- A. 1R-3, Radiochemistry Lab Area Monitor
- B. 1R-15, Unit 1 Condenser Air Ejector Gas Monitor
- C. 2R-19, Unit 2 Steam Generator Blowdown Monitor
- D. 1R-37, ~~Unit 1~~ Aux Bldg Vent Gas Monitor A

*ANSWER C

*delete. Not part
of normal title
of Rad Monitor*

*REFERENCE B11, "Radiation Monitoring System", Table B11-1

Direct/New/Modified: **Direct**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 071000K5.04 [2.5, 3.1]

Concurred.
Comments incorporated.
N Valon

*QUESTION

To prevent an explosive mixture in the Waste Gas System, which ONE of the following concentrations would be acceptable per operational guidance?

- fully acceptable*
- A. Hydrogen concentration at 10%, with NO Oxygen concentration
- make this 10%, since H₂ recombines would keep H₂ well below 100%.*
- B. Oxygen concentration between 2% and 4%, with ~~NO~~ Hydrogen concentration
- more realistic*
- C. Hydrogen concentration less than or equal to 4%, with a Oxygen concentration less than or equal to 3%
- D. Oxygen concentration less than or equal to 4%, with a Hydrogen concentration greater than 3%

*ANSWER A

- *REFERENCES
1. C21.3.1, "Gaseous Radwaste System", Section 5.3.1
 2. Lesson Plan P8182L-001C, "Rad Waste - Waste Gas, Enabling Objective 9 and page 24
 3. H4, "Offsite Dose Calculation Manual (ODCM)", Specification 3.9.2

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 071000A4.30 [2.9, 2.6]
 *QUESTION

What alarms would be available if excessive water drains to the sump tank from the 121 Low Level Gas Decay Tank?

	<u>Control Room</u>	<u>Waste Disposal Control Panel</u>
A.	No alarm	"Non-Aerated Sump Tank High Level" alarm
B.	"Waste Disposal Boron Recycle Local Alarm"	"Non-Aerated Sump Tank High Level" alarm
C.	No alarm	"Aerated Sump Tank High Level" alarm
D.	"Waste Disposal Boron Recycle Local Alarm"	"Aerated Sump Tank High Level" alarm

*ANSWER B

- *REFERENCES
1. B21B, "Liquid Waste System", pages 3, 16, 17, 18, 20 and Figures B21B-01 and B21B-02
 2. Alarm Response Procedure C47015, Annunciator Location 47015-0101
 3. Lesson Plan P8182L-001A, "Radioactive Waste Liquid", pages 22, 23, and 24
 4. C21.1.2 AOP1, "Loss of Aux Bldg Programmable Logic Controller Function", page 3

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 072000K3.02 [3.1, 3.5]
*QUESTION

The following plant conditions exist:

- Units 1 and 2 are in MODE 1
- Spent fuel is being transferred from one location in the fuel pool to another location in the fuel pool
- All radiation monitors are OPERABLE

The following then occurs:

- Annunciator "RAD MONITOR DOWNSCALE FAILURE PANEL ALARM" alarms
- Further checking reveals that R-5, "Spent Fuel Pool Area Monitor" has failed downscale

Which ONE of the following describes the required ACTION (if any) to be taken regarding fuel movement in progress?

- A. NO action required. Fuel movement may continue.
- B. Fuel movement may continue for up to 4 hours while repairing the R-5 radiation monitor.
- C. Fuel movement must be immediately suspended until an appropriate portable monitor is provided.
- D. Fuel movement must be immediately suspended until radiation levels in the SFP area are determined to be normal.

*ANSWER C

- *REFERENCES
1. Alarm Response Procedure C47022, Annunciator Location 47022-0208, "RAD MONITOR DOWNSCALE FAILURE PANEL ALARM"
 2. Technical Specifications 3.8.B
 3. C11, "Radiation Monitoring System", pages 11 and 19

Direct/New/Modified: Modified

Tier/Group: 2/1

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 072000 G 2.4.4 [4.0, 4.3]

*Concurred.
Comment incorporated.
M/alea*

*QUESTION

Which radiation monitor provides the SFP evacuation alarm requiring entry into D5.1 AOP1, "SFP Area Evacuation-Non-Refueling" ?

- A. R-5 ←
B. R-25 ← *add titles of rad monitors*
C. R-28 ←
D. R-31 ←

*ANSWER C

- *REFERENCES
1. Lesson Plan P8182L-002, "Radiation Monitoring System", Enabling Objective 1 and page 23
 2. B11, "Radiation Monitoring System", page 18
 3. D5.1 AOP1, "SFP Area Evacuation -Non-Refueling", Section 2.1, "Symptoms"

Direct/New/Modified: **New**

Tier/Group: 2/1

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 002000K1.07 [3.5, 3.7]

Concurred.
 Comments incorporated.
 Nicholas

At full power, full range/upper range both indicate low even though transmitters would indicate high. Both would also show <RCPs OFF>. The 107% is due to ΔT across core and its temperature effect; at 0% dynamic reads 100%.

*QUESTION

At 100% power, WHICH of the following ^{displayed} off-scale values of RVLIS would be expected?

	<u>Full Range</u>	<u>Upper Range</u>	<u>Dynamic Range</u>
A.	RCP ON LOW	RCP ON LOW	109%
B.	LOW 100%	HIGH 100%	100%
C.	HIGH 107%	LOW 107%	109%
D.	OFFSCALE HIGH	OFFSCALE HIGH	100%

*ANSWER CA

*REFERENCES 1. Lesson Plan PB170L-001A, "Inadequate Core Cooling Monitor System",
 Enabling Objective 4
 2. ICCM-50B drawing in PB170L-001A

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 006000K2.01 [3.6, 3.9]

*QUESTION

The following plant conditions exist on Unit 2:

- Unit 2 is in Hot Shutdown at full RCS temperature and pressure
- A loss of offsite power has occurred on Unit 2
- D6 Emergency Diesel Generator has failed to start
- All other plant equipment is available and has responded properly

What pumps are available to supply high head flow to the RCS
(assume NO operator action to restore power)?

	<u>Safety Injection Pumps</u>	<u>Charging Pumps</u>
A.	21	22
B.	22	22
C.	21	21 and 23
D.	22	21 and 23

*ANSWER A

- *REFERENCES
1. B18A, "Safety Injection System", page 6
 2. Lesson Plan P8180L-004, "Safety Injection System & Accumulators", pages 13 and 14
 3. Lesson Plan P8172L-001a, "CVCS", pages 18 and 19
 4. Lesson Plan P8186L-008, "Safeguards 4160V & 480V Electrical Dist.", page 10

Direct/New/Modified: **New**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 010000K3.01 [3.8, 3.9]

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 100% power
- PRZR pressure control is in automatic in the normal lineup
- PRZR backup heaters Group A and Group B are ON
- RCS pressure is at 2235 psig

The selected controlling PRZR pressure channel suddenly fails to 2000 psig.

Which of the following describes the plant response to this event? (Assume no operator action)

- A.
 - Both spray valves close
 - PRZR pressure increases to 2385 psig resulting in a reactor trip
- B.
 - Control bank heaters energize
 - Both spray valves close
 - Control bank heaters maintain PRZR pressure constant at 2235 psig
- C.
 - Both spray valves close
 - PRZR pressure increases to 2335 psig
 - PORV PCV-430 opens and cycles to control PRZR pressure
- D.
 - Control bank heaters energize
 - PRZR pressure increases
 - Spray valves open to maintain PRZR pressure at 2235 psig

*ANSWER C

- *REFERENCES
1. Lesson Plan, P8170L-005, "Pressurizer Pressure Control System", Enabling Objective 4
 2. B7, "Reactor Control System", Figure B7-14

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 011000K4.02 [3.3, 3.4]

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 100% power
- The Pressurizer Level Control Selector Switch is in the 2-1 position (White-Red)
- RCS Tave is at 563°F
- Rod control is in MANUAL

What is the controlling PRZR level channel and what is the PRZR level program setpoint (rounded to the nearest %) for this plant condition?

	<u>Controlling PRZR Level Channel</u>	<u>PRZR Level Program Setpoint</u>
A.	LT-426	33%
B.	LT-427	33%
C.	LT-426	36%
D.	LT-427	36%

*ANSWER C

- *REFERENCES
1. Lesson Plan P8170L-006, "Pressurizer Level Control System", Enabling Objective 2 and pages 14 and 15
 2. B7, "Reactor Control System", Figures B7-19 and B7-22

Direct/New/Modified: **Modified**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 012000K5.01 [3.3, 3.8]

*QUESTION

Which ONE of the following describes the type of core protection afforded by the Reactor Protection System Overtemperature-DeltaT trip?

- A. Power density
- B. Total core power
- C. KW per linear foot
- D. Departure from nucleate boiling

*ANSWER D

- *REFERENCES
1. Lesson Plan P8184L-004, "Reactor Protection", Enabling Objective 6
 2. B8, "Reactor Protection System", Table B8-1

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 014000K4.06 [3.4, 3.7]

*QUESTION

The following plant conditions exist on Unit 1:

- Reactor startup in progress
- Control Bank D rods are at 25 steps
- All other rods at expected position for given plant conditions.

While taking ICRR data, the Control Bank A Group 2 rods drop from their present position to the bottom due to a mechanical failure.

As the rods drop which of the following would be the FIRST annunciator to receive an alarm input signal for this event?

- A. "ROD AT BOTTOM"
- B. "FLUX RATE REACTOR TRIP"
- C. "CONTROL BANKS LOW LIMIT"
- D. "COMPUTER ALARM ROD DEVIATION/SEQUENCING"

*ANSWER D

*REFERENCES 1. Lesson Plan P8184L-005, Enabling Objectives 7 and 8
2. B6, "Rod Position Indication System", pages 5 and 6

Direct/New/Modified: **Modified**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **4**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 016000A2.02 [2.9, 3.2]

You have to be specific
in the fault location between
the "inverter" (general) and
inverter section (DC → AC converter).
Fault location will affect
availability of alternate power.

Concurred.
Comments incorporated.
M. Valdez

*QUESTION

The DC to AC inverter section of 33 Service Building Inverter
fails. No breakers change position

The 33 Service Building Inverter fails. What provides power (if any) to the Service Building
Addition Computer AC System?

- A. Power is automatically supplied from 33 battery and its associated battery charger
~~according to C20.17, "Service Building Addition DC and Computer AC"~~
- B. Power is automatically supplied from the ^{by...} alternate AC power source ~~according to~~
~~C20.17, "Service Building Addition DC and Computer AC"~~ through the inverter static switch.
- C. Power is lost, but can be manually ^{restored} supplied from the alternate AC power source in
accordance with C20.17 AOP2, "Computer UPS Removal From Service"
- D. Power is lost, ~~there is no backup power supply since this is a non-safeguards system~~
~~and no alternate power source is available.~~

*ANSWER B

- *REFERENCES
1. C20.17, "Service Building Addition DC and Computer AC",
pages 3 and 4
 2. Lesson Plan P8186L-003B, "Non-Safeguards Distr. Service
Building Systems Electrical", Enabling Objective 2 and
pages 25, 26, 29, 30, 32, 33, 34, and 35
 3. C20.17 AOP2, "Computer UPS Removal From Service", Figure 1

Direct/New/Modified: **New**

Tier/Group: 2/2

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 026000A2.05 [3.7, 4.1]

*Concurred.
Comments incorporated.
N. Vickers*

*QUESTION

During quarterly check valve testing of the Unit 1 Containment Spray Caustic Addition System per SP 1354, check valve CA-11-1 fails to open. All other equipment on Unit 1 is operable.

What is the impact of this malfunction on the containment spray system and what would be the consequence of this malfunction during a LOCA condition?

- A. No effect.
A redundant flowpath for NaOH addition to both containment spray pumps is still available.
- B. NaOH addition to containment spray will NOT be available.
There will be greater stress corrosion cracking due to lower pH.
- C. NaOH will only be available to ONE Containment Spray pump.
No effect because the other containment spray pump will provide the required NaOH addition.
- D. NaOH addition to containment spray will NOT be available.
There will be higher containment radiation levels due to increased radioactive noble gas production.

*ANSWER B

- *REFERENCES
1. Lesson Plan P8180L, "Containment Spray System", pages 10, 14, 34, and 41
 2. B18B, "Containment Spray System", page 4
 3. SP 1354, "CA-11-1 Caustic Addition Check Valve Quarterly Test"

Direct/New/Modified: **Modified**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 029000A3.01 [3.8, 4.1]

*QUESTION

Which ONE of the following is correct concerning an automatic isolation caused by a high radiation alarm on 1R-22, "Unit 1 Shield Building Vent Gas Monitor"?

	<u>Auto Isolation of the Containment Purge System</u>	<u>Auto Isolation of the Containment In-Service Purge System</u>
A.	YES	NO
B.	NO	YES
C.	YES	YES
D.	NO	NO

*ANSWER C

- *REFERENCES
1. Alarm Response Procedure C47047, Annunciator Location 47047 1R-22
 2. Lesson Plan P8180L-009E, "Containment Purge & In-Service Purge Ventilation System", page 11
 3. B19, "Containment Systems", pages 12 and 24, and Figure B19-9
 4. B11, "Radiation Monitoring System", page 32

Direct/New/Modified: **New**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 033000 G2.1.27 [2.8, 2.9]

*Concurred.
Comments incorporated.
N. Wilson*

*QUESTION

It is a given that one function of SFP cooling is to remove decay heat from SFP.

The primary functions of the Spent Fuel Pool Cooling System ~~INCLUDE~~ *is to remove decay heat.* Other functions include:

- A. Aiding in the draining and refilling of the refueling cavity, AND ~~Removing decay heat from the Spent Fuel Pool~~ *Aiding in the draining and refilling of the New Fuel Pit.*
- B. Aiding in the draining and refilling of the fuel transfer canal, AND Maintaining water purity of the RWST water for each Unit
- C. Aiding in the draining and refilling of the refueling cavity and the fuel transfer canal, AND Providing skimming of the Spent Fuel Pool to improve water clarity
- D. ~~Aiding in the draining and refilling of the Fuel Transfer Canal, AND Removing decay heat from the Spent Fuel Pool,~~ Providing alternate cooling of the RCS if RHR cooling is lost during refueling operations

*ANSWER B

- *REFERENCES
- 1. Lesson Plan P8182L-004, "Spent Fuel Pool Cooling System", Learning Objective 1 and page 7
 - 2. B16, "Spent Fuel Pool Cooling", pages 3 and 6

Direct/New/Modified: **New**
Tier/Group: 2/2
Level of Difficulty (1 - 5): **2**
Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 035000A4.05 [3.8, 4.0]

*QUESTION

During a natural circulation cooldown, to enhance natural circulation, at what level or range of levels are the SGs maintained prior to establishing cooldown using RHR shutdown cooling?

- A. Less than 30% Narrow Range
- B. 30% to 36% Narrow Range
- C. 50% to 65% Wide Range
- D. Greater than 65% Wide Range

*ANSWER B

- *REFERENCES
- 1. ES-0.3A, NATURAL CIRCULATION COOLDOWN WITH CRDM FANS, step 8d
 - 2. ES-0.3B, NATURAL CIRCULATION COOLDOWN WITHOUT CRDM FANS, step 7d
 - 3. Lesson Plan P8197-011, "E-0 Review", Enabling Objective 18

Direct/New/Modified: **New**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 039000K1.02 [3.3, 3.3]
 *QUESTION

Concurred.
 Comment incorporated.
 M. L. L.

The following plant conditions exist on Unit 1:

- A Safety Injection has occurred on Unit 1 due to a small break LOCA
- Containment pressure peaked at 15 psig and is now slowly decreasing
- RCS temperature is 400°F
- Condenser vacuum is 13"Hg
- The steam dump mode selector switch is in the "STM PRESS" mode
- The steam dump bypass interlock switches are in the "BYPASS INTERLOCK" position
- MSIVs are open. *← Add to be more specific of plant condition*

Which of the following equipment is available in the present plant condition to release steam from the Main Steam System for decay heat removal?

	<u>Atmospheric Steam Dump Valves</u>	<u>Condenser Steam Dump Valve</u>
A.	YES	YES
B.	NO	YES
C.	YES	NO
D.	NO	NO

*ANSWER D

- *REFERENCES
1. Lesson Plan P8174L-002, Steam Dump Control System", Enabling Objectives 1 and 3, and pages 12, 16, 17 28, 34 and 35
 2. B27, "Main and Auxiliary Steam System", Figures B27-01 and B27-02
 3. B18C, "Engineered Safeguards System", page 16

Direct/New/Modified: **New**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL R
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 055000K1.06 [2.6, 2.6]
 *QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is in Hot Shutdown with secondary plant startup in progress
- The Main Air Ejectors are in service
- One Hogger Air Ejector is operating to assist in drawing a vacuum in the condenser
- The ventilation systems are in their normal alignment and operation

Which of the following describes the relationship between the Condenser Air Removal System and the Process Radiation Monitoring System?

- A. All noncondensable gases discharged through the Main Air Ejectors and the operating Hogger from the condenser are being monitored by 1R-15 and the Auxiliary Building Vent Stack Monitors
- B. All noncondensable gases discharged through the Main Air Ejectors and the operating Hogger from the condenser are being monitored by 1R-12 and the Shield Building Vent Stack Monitors
- C. All noncondensable gases discharged through the Main Air Ejector from the condenser are being monitored by 1R-15 and the Auxiliary Building Vent Stack Monitors
- D. All noncondensable gases discharged through the Main Air Ejector from the condenser are being monitored by 1R-12 and the Shield Building Vent Stack Monitors

*ANSWER C

- *REFERENCES
1. B26, "Air Removal System", pages 2, 3, 4, 7, and Figure B26-1
 2. B11, "Radiation Monitoring System", pages 13 and 31
 3. Lesson Plan P8174L-001, "Main and Auxiliary Steam System", pages 35 through 39
 4. Lesson Plan P8182L-002, "Radiation Monitoring System", pages 12 and 17

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 062000K3.03 [3.7, 3.9]

Concurred.
 Comment incorporated.
 N. Valon

*QUESTION

The breaker at MCC 1A ~~C1~~ for 13 Instrument Inverter has tripped open.

Which of the following describes the information available to the Control Room Operator and the status of the inverter?

	<u>Main Control Board Annunciator Alarm</u>	<u>Status of 13 Instrument Inverter</u>
A.	No	Inverter powered from 11 Battery
B.	Yes	Inverter powered from 11 Battery
C.	No	Inverter powered from internal alternate AC source
D.	Yes	Inverter powered from internal alternate AC source

*ANSWER A

- *REFERENCES
1. Lesson Plan P8186L-015, "Safeguard Dist. 120 VAC Instrumentation", Enabling Objectives 3 and 5a, and pages 15 and 16
 2. B20.8, "Instrument AC Distribution System", pages 2, 3, 4, and Figure B20.8-3

Direct/New/Modified: **Modified**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 063000K4.04 [2.6, 2.9]

***QUESTION**

The following plant conditions exist on Unit 1:

- Train "A" DC power was lost
- A Reactor Trip has occurred from 100% power

Which ONE of the following explains why the main generator breakers failed to trip following the Reactor Trip?

- A. The Train "A" DC power provides power for the generator protective relaying
- B. The 20 AST turbine trip sends a trip to the generator breakers from Train "A" DC
- C. The Train "A" DC power provides control power to the generator breaker trip coils
- D. The "Fast Transfer" start signal is lost, and thus the signal is not complete to give a trip

***ANSWER A**

- *REFERENCES**
1. Lesson Plan P8186L-005, "DC Distribution",
Enabling Objective 9 and page 21
 2. 1C20.9 AOP1, "Loss of Unit 1 Train "A" DC", NOTE on page 4

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 064000K6.07 [2.7, 2.9]

*Concurred.
Comment incorporated.
M. Valles*

*QUESTION

An Operator investigating a D6 Diesel Generator local alarm reports that the relief valve for 1A Starting Air Receiver has failed open. The Control Room directs the Operator to isolate the air receiver from D6.

1A

Immediately after the air receiver outlet valve is closed, an SI occurs on Unit 2.

As a result of the failure, D6 will (with no operator action):

- A. Not start
- B. Start and run on both Engines 1 and 2
- C. Start on Engine 2 only and run on Engine 2 only
- D. Start on Engine 2 only and run on both Engines 1 and 2

*ANSWER B

- *REFERENCES
- 1. B38C, "Unit 2 Diesel Generators", page 63
 - 2. Lesson Plan P8186L-014, "D5/D6 Generator Set/Auxiliaries", Enabling Objective 3e and pages 36 through 39
 - 3. 2C20.7, "D5/D6 Diesel Generators", pages 7 and 9
 - 4. SP 2305, "D6 Diesel Generator Monthly Slow Start Test", page 28
 - 5. SP 2307, "D6 Diesel Generator 6 Month Fast Start Test", pages 33 and 34

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 073000A1.01 [3.2, 3.5]

*Concurred.
Comment incorporated.
M. Valer*

*QUESTION

The Shield Building Vent Gas Monitor (1R-22) has just alarmed in the Control Room. The alarm was acknowledged and the annunciator "HIGH RADIATION TRAIN A PANEL ALARM" stayed in solid.

Subsequent Train A radiation monitor alarms will be identified to the Control Room Operators via: (Choose ONE)

- A. "HIGH RADIATION TRAIN A PANEL ALARM" reflash with no audible alarm
- B. "HIGH RADIATION TRAIN A PANEL ALARM" reflash with audible alarm
- C. "VICTOR ^{EE} ~~IN~~ HIGH RADIATION" alarm in the Control Room
actual wording.
- D. ERCS SAS Display only

*ANSWER B

- *REFERENCES
- 1. Alarm Response Procedure C47022, Annunciator Location 47022-0109
 - 2. Alarm Response Procedure C47047, Alarm Response Procedure Cover Page
 - 3. B46B, "Station Annunciator System", pages 4, 5, and 6

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 075000 **G2.4.31** [3.3, 3.4]

*Concurred.
Comments incorporated
M. Valer*

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 90% power
- The annunciator "12 CIRC WATER PUMP LOCKED OUT" has alarmed

The initial actions that should be taken per the alarm response procedure are to:

- A. Trip the reactor and enter E-0, "Reactor Trip or Safety Injection"
- B. ~~Monitor turbine back pressure and trip the turbine if limits are exceeded~~
Place the standby air ejector in service
- C. Reduce power to < 350 MWe and verify Condenser Crossover Valve is open
- D. ~~Verify "Condenser Steam Dump Permissive" is LIT and trip the turbine if the permissive is lost.~~
Manually trip the turbine and verify automatic reactor trip.

*distinctions "B" & "D"
could be argued
to be correct*

*ANSWER C

- *REFERENCES
1. Alarm Response Procedure C47001, Annunciator Location 47001-0104
 2. Lesson Plan P8176L-002A, "Circulating Water and Cooling Towers", Enabling Objective 6

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 079000A2.01 [2.9, 3.2]

***QUESTION**

Given the following plant conditions and a copy of Figure B34-01:

- 121 and 122 Air Compressors are running in PREFERRED
- 123 Air Compressor is out of service for maintenance
- 124 Air Compressors is running in PREFERRED
- 125 Air Compressor is in STANDBY
- MV-32318, "Service Air Header Isolation Valve" is OPEN
- Manual valve CP-40-7, "Station Air Receiver X-Connect to Instrument Air" is OPEN
- The plant is otherwise in a normal valve lineup

The following then occurs:

- A break in a Unit 1 instrument air line occurs which causes pressure to decrease to 70 psig
- No operator actions have occurred

Which of the following describes the status of the cross-connection of Station Air to Instrument Air?

- A. Station Air is isolated from Instrument Air
- B. Station Air is supplying Instrument Air to Unit 1 only
- C. Station Air is supplying Instrument Air to Unit 2 only
- D. Station Air is supplying Instrument Air to both Units 1 and 2

***ANSWER C**

- *REFERENCES**
1. Lesson Plan P8178L-005, "Instrument and Station Air", page 14
 2. B34, "Instrument and Station Air", pages 12 and 13 and Figure B34-08
 3. C34 AOP1, "Loss of Instrument Air", Section 2.2
 4. Alarm Response Procedure C47023, Annunciator Location 47023-0502

Direct/New/Modified: ~~New~~

Tier/Group: 2/2

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: ~~Comprehension-Analysis~~

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 086000A3.01 [2.9, 3.3]

*QUESTION

Fire header pressure decreased to 97 psig and a Fire Protection System actuation occurred per system design. The following observations were made 2 minutes after system actuation (assume no operator action):

- Fire protection header pressure is now at 125 psig.
- The control room motor driven fire pump control switch, CS-46114, is in "PULLOUT" with the pump's power supply breaker closed.

Which fire protection system pumps would be running under these conditions?

	<u>121 Jockey Pump</u>	<u>121 Motor Driven Pump</u>	<u>Diesel Driven Pump</u>	<u>Screenwash Pump</u>
A.	YES	YES	YES	NO
B.	YES	YES	NO	YES
C.	YES	NO	YES	YES
D.	NO	YES	YES	YES

*ANSWER B

- *REFERENCES
1. Lesson Plan P8178L-002, "Fire Detection and Protection Systems", pages 11 through 14
 2. C31, "Fire Protection & Detection Systems", Precaution 3.1

Direct/New/Modified: **Direct**

Tier/Group: 2/2

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL R
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 000005A4.02 [3.4, 3.1]

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is shutdown with RHR shutdown cooling in service
- The 11 RHR pump is running with both RHR HXs in service
- The RHR bypass flow control valve controller is in AUTO

The instrument air line to the RHR bypass flow control valve breaks.

Which of the following indications will be observed on the Main Control Board?

	<u>RHR Flow</u>	<u>Monitor Light For RHR Bypass Flow Control Valve</u>
A.	Decreases	"SI Not Ready Panel" monitor light OFF
B.	Increases	"SI Not Ready Panel" monitor light OFF
C.	Decreases	"SI Not Ready Panel" monitor light ON
D.	Increases	"SI Not Ready Panel" monitor light ON

*ANSWER A

- *REFERENCES
1. Lesson Plan P8180L-003, "Residual Heat Removal", pages 26, 27, 53 and 54
 2. B15, "Residual Heat Removal System", page 10
 3. B18B, "Emergency Core Cooling System", page 11, and Figure B18B-6

Direct/New/Modified: **New**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 027000G2.1.32 [3.4, 3.8]

*Concerned.
Comment incorporated.
N. Valon*

*QUESTION

The following plant conditions exist on Unit 1:

- Unit 1 is at 100% power
- All systems are in their normal at power lineup
- Annunciators "11 CAUSTIC ADDITION STANDPIPE LO LVL" and "11 CAUSTIC ADDITION STANDPIPE LO-LO LVL" are LIT
- Caustic Addition Standpipe level is at 90% (2637 gal) ← *operators trained to know required level in gallons (not %)*
- A sodium hydroxide sample that was requested from Chemistry has come back with a concentration of 9.4%

What operational limitations (if any) are in effect due to the above plant conditions?

- A. Caustic Addition Standpipe is OPERABLE in the condition stated
- B. Caustic Addition Standpipe level is below the Tech Spec limit
- C. Caustic Addition Standpipe concentration is below the Tech Spec limit
- D. Caustic Addition Standpipe level and concentration are below the Tech Spec limit

*ANSWER A

- *REFERENCES
1. Lesson Plan P8180L-002, "Containment Spray System", Enabling Objective 12 and pages 15, 31, 32, 33, and 34
 2. Alarm Response Procedure C47019, Annunciator Location 47019-0303 for "11 CAUSTIC ADDITION STANDPIPE LO LVL" alarm
 3. Technical Specification 3.3.B.1.c

Direct/New/Modified: **New**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 028000K5.03 [2.9, 3.6]

*QUESTION

What is the reason that the quantity of aluminum metal components in containment must be minimized?

- A. Aluminum melts in a high temperature fire
- B. Aluminum reacts with sodium hydroxide to produce hydrogen
- C. Aluminum combines with elemental iodine to form a soluble salt
- D. Aluminum loses structural strength in a high energy line break environment

*ANSWER B

*REFERENCE Lesson Plan P8180L-008, "Containment Hydrogen Control",
Enabling Objective 2 and pages 9,10,11, and 31

Direct/New/Modified: **Direct**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL B
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 034000A1.02 [2.9, 3.7]

*QUESTION

The following plant conditions exist on Unit 1:

- Refueling operations are in progress in Containment and in the Spent Fuel Pool
- The fuel transfer tube gate valve is open

Which ONE of the following alarms would provide a symptom to the Control Room Operator of a possible substantial loss of water from the refueling cavity?

- A. "11 RHR PIT SUMP HI/LO LVL"
- B. "121 SPENT FUEL PIT HI TEMP"
- C. "CONTAINMENT SUMP C HI LVL"
- D. "STM GEN NOZZLE DAM LOCAL ALARM"

*ANSWER C

- *REFERENCES
1. D5.2 AOP3, "Decreasing Refueling Water Level During Refueling", Section 2.1, "Symptoms"
 2. Alarm Response Procedure C47016, Annunciator Location 47016-0504

Direct/New/Modified: **Direct**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*Replace question.
A&D could also be correct.
Concerned.
Replaced question.
7/1/02*

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 041000K3.02 [3.8, 3.9]

*QUESTION

The following plant conditions exist on Unit 1:

- The reactor is critical at 10E-8 amps during a startup near the end of cycle life
- RCS temperature is being controlled by steam dumps
- PT-484, "Unit 1 Steam Header Pressure" transmitter, then fails to 0 psig.

With NO operator action, which of the following statements describes the resulting RCS temperature and reactor power response?

- A. RCS Tave remains stable at 547°F.
Reactor power remains stable at 10E-8 amps.
- B. RCS Tave increases and stabilizes at 552 °F.
Reactor power remains stable at 10E-8 amps.
- C. RCS Tave remains stable at 547°F.
Reactor power decreases to a stable level in the source range.
- D. RCS Tave increases and stabilizes at 552°F.
Reactor power decreases to a stable level in the source range.

*ANSWER D

*REFERENCE Lesson Plan P8174L-002, "Steam Dump Control System",
Enabling Objective 9

Direct/New/Modified: **Direct**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 076000K4.02 [2.9, 3.2]
*QUESTION

*Concurred.
Comments incorporated.
M. Malor*

The following plant conditions exist:

- Both Unit 1 and Unit 2 are at 100% power
- 11 and 21 Cooling Water Pumps are running
- A normal Cooling Water System lineup is in effect

An inadvertent Safety Injection occurs on Unit 2 and all equipment functions as designed.

A check of the Cooling Water System is made one minute after the Safety Injection. No operator actions have been performed, and all equipment has performed as required per system design. Which of the following is the expected Cooling Water System alignment?

- A. 11, 12, 21, and 121 Cooling Water Pumps running,
121 Cooling Water Pump aligned to ~~Unit 1~~ A train header
- B. 11, 12, 21, and 121 Cooling Water Pumps running,
121 Cooling Water Pump aligned to ~~Unit 2~~ B train header
- C. 11, 12, 21, and 22 Cooling Water Pumps running,
121 Cooling Water Pump off and aligned to A train header
- D. 11, 12, 21, and 22 Cooling Water Pumps running,
121 Cooling Water Pump off and aligned to B train header

to reflect plant terminology

*ANSWER D

- *REFERENCES
1. Lesson Plan P8176L-003, "Cooling Water System",
Enabling Objective 9 and page 59
 2. B-35, "Cooling Water System", pages 19, 23, 24, and
Figure B35-01

Direct/New/Modified: **Direct**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
 *HNUM
 *ANUM
 *QCHANGED FALSE
 *ACHANGED FALSE
 *QDATE
 *FAC 282 Prairie Island
 *RTYP PWR-WEC2
 *EXLEVEL B
 *EXMNR
 *QVAL
 *SEC
 *SUBSORT
 *KA 078000A3.01 [3.1, 3.2]

*QUESTION

Given the following plant conditions:

- 121, 122, ^{and} 123, ~~124~~, and ~~125~~ Air Compressors are all available
- The plant is in a normal alignment per C34.

If air header pressure drops, at what pressure would the third air compressor start?
 For these plant conditions, if instrument air pressure is below (1) psig one would expect two (2) Instrument Air Compressors to be running, and if instrument air pressure is below (2) psig one would expect all three (3) Instrument Air Compressors to be running.
 (Fill in the blanks)

- | | | |
|----|----------------|----------------|
| | (1) | (2) |
| A. | 85 | 80 |
| B. | 90 | 85 |
| C. | 95 | 90 |
| D. | 100 | 95 |

*ANSWER C B

- *REFERENCES
1. Lesson Plan P8178L-005, "Instrument and Station Air", pages 16 and 17
 2. B34, "Instrument and Station Air", page 7
 3. C34, "Station Air System", page 11

Direct/New/Modified: **New**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

Normal system lineup is 2 in PREFERRED
 and one in 1st standby. Normally have
 2 running, 3rd would start @ < 90#

Concurred.
 Comments incorporated.
 M. Valon

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 103000**K1.03** [3.1, 3.5]

***QUESTION**

The following plant conditions exist on Unit 1:

- A large break LOCA occurred ONE (1) hour ago on Unit 1
- All safeguards systems and equipment have responded properly

Areas that could receive leakage from the primary containment are now being filtered **ONLY** by the:

- A. Shield Building Ventilation System
- B. Shield Building Ventilation System and the Auxiliary Building Special Ventilation System
- C. Auxiliary Building Special Ventilation System and the Spent Fuel Pool Special Ventilation System
- D. Auxiliary Building Normal Ventilation System and the Auxiliary Building Special Ventilation System

***ANSWER B**

- *REFERENCES**
- 1. Lesson Plan P8180L-009C, "Shield Building Special Ventilation System", Enabling Objectives 1 and 2 and pages 7, 8, 9 and 10
 - 2. Lesson Plan P8180L-009B, "Aux Bldg Special Vent System", Enabling Objectives 1 and 2 and pages 7 and 11
 - 3. B19, "Containment Systems", pages 5, 26, 29, 30, 33, and Figures B19-10 and B19-11

Direct/New/Modified: **New**

Tier/Group: 2/3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001 G 2.1.1 [3.7, 3.8]

*QUESTION

You are preparing to perform a surveillance using a "Reference Use" procedure.

Which of the following describes the performance requirements for this procedure in accordance with 5AWI 1.11.2, "Procedure Use and Adherence"?

- A. Can perform the procedure from memory.
- B. Must read each step of the procedure prior to performing the step.
- C. Must ensure the procedure is available, but NOT necessarily at the work location.
- D. Can perform a segment of the procedure from memory, and then review the procedure to ensure the activity is being performed correctly.

*ANSWER D

*REFERENCES

1. SWI O-0, "Conduct of Operations"
2. FP-OP-COO-01, "Conduct of Operations", Attachment 14
3. 5AWI 1.11.1, "Procedure Use and Adherence", page 11

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G 2.1.3 [3.0, 3.4]

*QUESTION

The following situation exists:

- You are the Unit 2 Lead Equipment and Reactor Operator arriving on day shift Wednesday for a shift turnover
- The last time you were on shift was on the previous Friday day shift as the Unit 2 Lead Equipment and Reactor Operator
- ~~A trainee was on during the night shift and was assigned by the night shift Shift Supervisor to monitor Unit 2 with the night shift Unit 2 Lead Equipment and Reactor Operator~~
- ~~Another trainee is on during day shift and was assigned by the day shift Shift Supervisor to monitor Unit 2 with you~~

Which of the following is CORRECT pertaining to you and your trainee when performing the shift turnover as the on-coming Unit 2 Lead Equipment and Reactor Operator?

- are REQUIRED* *though Sunday*
- A. You ~~and your trainee~~ need to review the log back to ~~Monday~~ day shift.
- B. At Shift Supervisor discretion, the turnover for you and your trainee may be conducted in the ~~Shift Manager's area~~. *Operation Lounge*.
- C. *A board walkdown may be delayed until after you assume the duty from the night shift operator*
You shall ensure the day shift trainee receives a complete and thorough turnover.
- D. At Shift Supervisor discretion, the night shift ~~trainee~~ *Shift Supervisor* may give the turnover to you and your trainee if the night shift Unit 2 Lead Equipment and Reactor Operator is NOT available.

*ANSWER *C A*

- *REFERENCES
1. SWI O-0, "Conduct of Operations"
 2. FP-OP-COO-01, "Conduct of Operations", Attachment 14
 3. SWI O-2, "Shift Organization, Operation, & Turnover", Section 6.3

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*Concurred.
Comments incorporated.
M. Valon*

*Focus more on RO responsibilities
than on trainees.*

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001 G 2.1.29 [3.4, 3.3]

*QUESTION

During the performance of a valve lineup following maintenance on the system, a manual valve is required to be "THROTTLED 3 TURNS OPEN".

Which ONE of the following is the correct method of performing a verification for the proper position of this valve?

- A. Fully close the valve and re-open the valve 3 turns
- B. Concurrently verify at the time of the positioning by the performer
- C. Fully open the valve and then re-close the same number of turns
- D. Observe chain and lock in place on the valve

*ANSWER B

*REFERENCE 5AWI 3.10.1, "Methods of Performing Verifications", Rev 10
pages 6, 13, 14, 15 and 19

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001 G 2.2.12 [3.0, 3.4]

*QUESTION

What is the significance between "SP" and "TP" procedures and what is the purpose of each series of procedures?

- A. "SP" are surveillance procedures of a periodic nature for critical plant equipment and functions listed in Tech Specs or other regulatory requirements.
"TP" are test procedures which are normally intended for one time use only (e.g. modification test procedures, special tests).
- B. "SP" are surveillance procedures for regulatory requirements required to be performed at less than or equal to a refueling outage frequency.
"TP" are test procedures for regulatory requirements required to be performed infrequently (i.e. at greater than a refueling outage frequency).
- C. "SP" are surveillance procedures for critical plant equipment and functions listed in Tech Specs or other regulatory requirements.
"TP" are test procedures of a periodic nature which are NOT required by regulatory requirements, but are prudent for safe, reliable, and efficient plant operation.
- D. "SP" are special procedures which are normally intended for one time use only (e.g. modification test procedures, special tests).
"TP" are test procedures of a periodic nature for critical plant equipment and functions listed in Tech Specs or other regulatory requirements.

*ANSWER C

*REFERENCE G1, "Surveillance and Periodic Test Program", Rev 19, pages 3 and 4

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G 2.2.13 [3.6, 3.8]

*Concurred.
Comments incorporated.
N. Valon*

*QUESTION

Which of the following is a situation allowing safety tags to be removed from equipment?

- A. With a temporary restoration, the equipment can be returned to service with the system intact while awaiting parts to complete the job.
- B. With a temporary restoration, the system can be restored while the workers are leaving for the weekend.
- C. A partial restoration is requested on a work order cross-referenced to another work order.
- D. With a temporary lift to support equipment testing *per the Work Order,*

add to reflect current practice.

*ANSWER D

*REFERENCE 5AWI 15.5.1, "Plant Equipment Control and Clearance Process",
Section 6.12, pages 90, 91, 94 and page 11(Definition of "Safety Tags")

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001 G **2.2.30** [3.5, 3.3]

*QUESTION

Which ONE of the following is a responsibility of the Control Room Operator during refueling operations?

- A. Check source range counts while a fuel assembly is being placed in the core
- B. Verify proper operation of the Containment Evacuation alarm each shift
- C. Verify that the RCCA change fixture is in the correct position
- D. Maintain a 1/M plot during core offload operations

*ANSWER A

*REFERENCES 1. D5.2, "Reactor Refueling Operations", step 7.1.6
2. SWI 0-41, "Duties & Responsibilities of Fuel Handling Personnel", step 6.1.6

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G **2.3.1** [2.6, 3.0]

*QUESTION

Which ONE of the following is the HIGHEST exposure that an operator is expected to receive while working in a posted Radiation Area for 1 hour?

- A. 5 mrem
- B. 25 mrem
- C. 90 mrem
- D. 125 mrem

*ANSWER C

*REFERENCES

1. F2, "Radiation Safety", steps 3.2.2 and 3.2.3
2. 10CFR20, section 20.1003, "Definitions"

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G 2.3.2 [2.5, 2.9]

*QUESTION

One of the objectives of the ALARA program is to keep the annual integrated dose for all station workers as low as reasonably achievable.

Which of the following is a method used to minimize doses in the plant?

- A. CVCS letdown flow rate is minimized during plant outages.
- B. Portable shielding is always used in all work near hot spots.
- C. Power changes are performed at the maximum rate allowed by procedure.
- D. Dissolved hydrogen is maintained in the reactor coolant system during power operation.

*ANSWER D

*REFERENCE F2, "Radiation Safety", page 4

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001 G2.3.11 [2.7, 3.2]

***QUESTION**

A liquid release to the river through R-18, "Waste Disposal System Liquid Monitor" is allowed:

- A. if NO Steam Generator Blowdown from EITHER Unit is going to the river.
- B. provided at MOST one (1) Unit's Steam Generator Blowdown is going to the river.
- C. if BOTH Units Steam Generator Blowdown is going to the river.
- D. provided at MOST two (2) liquid releases are going through R-18.

***ANSWER B**

- *REFERENCES**
- 1. C21.1-5.1, "121 ADT Monitor Tank Release",
Precautions 3.1 and 3.2
 - 2. C21.1-5.5, "Releasing 11 SGB Monitor Tank To The River",
Precautions 3.1 and 3.2
 - 3. C21.1-5.11, "Releasing 121 CVCS Monitor Tank To The River",
Precautions 3.1 and 3.2

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G **2.4.2** [4.3, 4.6]

*QUESTION

A LOCA occurred and containment pressure increased to 10 psig with containment radiation at 2E4 R/Hr.

If containment pressure lowers to 4 psig with containment radiation at 5E3 R/Hr, what type of setpoints should now be used in the EOPs and what is the reason for their use?

- A. "Adverse Containment Condition" setpoints should be used until an engineering analysis is performed.
- B. "Normal Containment Condition" setpoints should be used because containment pressure has decreased to below the "Adverse Containment Condition" setpoint.
- C. "Adverse Containment Condition" setpoints should be used because containment pressure is still greater than the "Adverse Containment Condition" setpoint.
- D. "Normal Containment Condition" setpoints should be used because both containment pressure and containment radiation have decreased to below the "Adverse Containment Condition" setpoints.

*ANSWER A

*REFERENCE SWI 0-10, "Operations Manual Usage", Section 7.9.4

Direct/New/Modified: **Direct**

Tier/Group: 3

Level of Difficulty (1 - 5): **2**

Memory/Comprehension-Analysis: **Memory**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G 2.4.6 [3.1, 4.0]

*QUESTION

"FR" Emergency Operating Procedures provide operator guidance for _____
_____. (Fill in the blank)

- A. low probability or multiple failure events
- B. recovery action following use of an E procedure
- C. diagnosis and recovery from design basis events
- D. restoration of a critical safety function to a satisfied condition

*ANSWER D

*REFERENCE Lesson Plan P8197L-010, "EOP Intro-Procedure Review",
Enabling Objective 6 and pages 10, 11, 13, and 26

Direct/New/Modified: **Modified**

Tier/Group: 3

Level of Difficulty (1 - 5): 2

Memory/Comprehension-Analysis: **Memory**

*QNUM
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*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G 2.4.11 [3.4, 3.6]

*Concurred.
Comment incorporated.
N. Valon*

*QUESTION

Which of the following ^{sets of} statements are correct regarding implementation of Abnormal Operating Procedures (AOPs)?

- A. - Some AOPs have immediate action steps
- AOPs may be implemented concurrently with the EOPs as time permits, except when a Safety Injection has actuated
- B. - There are no immediate action steps in the AOPs
- Only one AOP may be implemented concurrently with the EOPs at a time, as long as actions do not impede EOP recovery actions
- C. - Some AOPs have immediate action steps
- AOPs may be implemented concurrently with the EOPs as time permits, as long as actions do not impede EOP recovery actions
- D. - There are no immediate action steps in the AOPs
- AOPs may not be implemented when the EOPs have been entered, since AOPs were written assuming that a Reactor Trip or Safety Injection has not occurred

*ANSWER C

- *REFERENCES
- 1. SWI 0-10, "Operations Manual Usage", Section 7.3
 - 2. Examples of use of AOPs with EOPs:
 - a. 1C3 AOP2, "Loss of RCP Seal Cooling", step 2.4.2
 - b. 1C20.9 AOP1, "Loss of Unit 1 Train "A" DC", step 2.4.1

Direct/New/Modified: **Modified**

Tier/Group: 3

Level of Difficulty (1 - 5): 3

Memory/Comprehension-Analysis: **Comprehension-Analysis**

*QNUM
*HNUM
*ANUM
*QCHANGED FALSE
*ACHANGED FALSE
*QDATE
*FAC 282 Prairie Island
*RTYP PWR-WEC2
*EXLEVEL R
*EXMNR
*QVAL
*SEC
*SUBSORT
*KA 294001G **2.4.20** [3.3, 4.0]

*Concurred.
Comment incorporated.
N. Valdez*

*QUESTION

Which of the following is correct regarding the use of NOTES or CAUTIONs in the EOPs?

- A. NOTES and CAUTIONs ONLY apply to the step which they immediately precede.
- B. NOTES and CAUTIONs which precede the first step MAY apply to the entire procedure.
- C. CAUTIONs contain administrative or advisory information which supports operator action.
- D. NOTES ~~may~~ advise on actions or transitions which may become necessary depending on changes in plant conditions.

*ANSWER B

*REFERENCES

1. SWI 0-10, "Operations Manual Usage", Section 7.9.5
2. Lesson Plan P8197L-010, "EOP Intro-Procedure Review", page 14

Direct/New/Modified: **New**

Tier/Group: 3

Level of Difficulty (1 - 5): **3**

Memory/Comprehension-Analysis: **Memory**