

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Operator Licensing Examination Report: 50-267/OL 89-02

Docket No.: 50-267

Operating License No.: DPR-34

Licensee: Public Service Company of Colorado
P. O. Box 840
Denver, Colorado 80201

Facility: Fort St. Vrain Nuclear Generating Station

Examinations at: Fort St. Vrain Nuclear Generating Station

Chief Examiner: J. B. Eaton FOR: 8/8/89
R. B. Eaton, Examiner Date
Operator Licensing Branch, NRR

Approved by: John L. Pellet 8/9/89
J. L. Pellet, Chief Date
Operator Licensing Section
Division of Reactor Safety

Summary

NRC Administered Examinations Conducted during Week of July 10, 1989
(Report 50-267/OL 89-02)

NRC administered examinations to four Limited Senior Reactor Operator (LSRO) applicants. Three LSROs passed all portions of their examinations and have been issued the appropriate license. One LSRO failed the written examination.

DETAILS

1. Persons Examined

	<u>LSRO</u>	<u>Total</u>
License Examinations: Pass -	3	3
Fail -	1	1

2. Examiner

R. B. Eaton, Chief Examiner

3. Examination Report

Performance results for individual examinees are not included in this report as it will be placed in the NRC Public Document Room and these results are not subject to public disclosure.

a. Examination Review Comment and Resolution

In general, editorial comments or changes made during the examination, or subsequent grading reviews are not addressed by this resolution section. This section reflects resolution of substantive comments made by FSV staff. The only comments addressed in this section are those which were not accepted for incorporation into the examination or answer key. Those comments accepted are incorporated into the master examination key, which is included in this report. Comments may be paraphrased for brevity. The full text of the comments is attached.

N.05 Reject the question and the answer on the basis that the special senior licensed operator (SSLO) is not responsible for the system lineup or operation.

Response: Comment is rejected. The facility lesson and system material provide for more than the rudimentary knowledge required to answer this question and it is appropriate that the SSLO have a minimum working knowledge of the few important systems that interface with the fuel handling equipment.

Two other comments were submitted by the staff, which were fully incorporated in the written examination answer key.

b. Site Visit Summary

- (1) At the end of the written examination administration, the facility licensee training staff was provided a copy of the examination and answer key for the purpose of commenting on the examination content validity. The licensee was informed that written examination grading would not be started until licensee review comments were received in the headquarters office.

(2) At the conclusion of the site visit, an exit meeting was held with a member of the plant staff. The following items were communicated to the facility licensee representative as comments, observations, suggestions, or deficiencies:

- (a) The applicants exhibited good knowledge of the refueling equipment and its applications. Their familiarity with the instrumentation, supporting systems, and administrative requirements is especially noteworthy.
- (b) An area of generic weakness was found in the use of procedures, probably due to the absence of procedures for reference during the operating portion of the examinations.

c. Master Examination and Answer Key

A master copy of the FSV license examination and answer key are attached. The facility licensee comments, which have been accepted, are incorporated into the answer key.

d. Facility Examination Review Comments

The facility licensee comments regarding the written examinations are attached. Those comments not incorporated into the answer key have been addressed in the resolution section of this report.

U. S. NUCLEAR REGULATORY COMMISSION
 SENIOR REACTOR OPERATOR LICENSE EXAMINATION
 REGION 4

FACILITY: FT. ST. Vrain
 REACTOR TYPE: HTGR-GA
 DATE ADMINSTERED: 89/07/10
 CANDIDATE: _____

INSTRUCTIONS TO CANDIDATE:

Use separate paper for the answers. Write answers on one side only. Staple question sheet on top of the answer sheets. Points for each question are indicated in parentheses after the question. The passing grade requires at least 70% in each category. Examination papers will be picked up six (6) hours after the examination starts.

CATEGORY VALUE	% OF TOTAL	CANDIDATE'S SCORE	% OF CATEGORY VALUE	CATEGORY
<u>12.00</u>	<u>16.90</u>	-----	-----	M. REACTOR AND FUEL CHARACTERISTICS
<u>17.00</u>	<u>23.94</u>	-----	-----	N. EQUIPMENT, INSTRUMENTATION AND DESIGN DESCRIPTION
<u>13.00</u>	<u>18.31</u>	-----	-----	O. PROCEDURES AND LIMITATIONS
<u>15.00</u>	<u>21.13</u>	-----	-----	P. EMERGENCY SYSTEMS AND SAFETY DEVICES
<u>14.00</u>	<u>19.72</u>	-----	-----	Q. HEALTH PHYSICS AND RADIATION PROTECTION
<u>71.00</u>			%	TOTALS
		-----	-----	FINAL GRADE

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

QUESTION M.01 (1.00)

Circle the one answer that correctly lists the three stages of an "induced nuclear reaction".

- A. Reactants, Products, Scattering
- B. Compound Nucleus, Products, Scattering
- C. Scattering, Reactants, Compound Nucleus,
- D. Reactants, Compound Nucleus, Products

QUESTION M.02 (2.00)

Select the letter in column B that best describes the item in column A and place it in the space provided before the number.

COLUMN A

- 1. IONIZATION
- 2. EXCITATION
- 3. COMPTON SCATTERING
- 4. PAIR ANNIHILATION

COLUMN B

- A. A process by which a gamma interacts with an orbital electron giving up all its energy causing ejection of the electron from the atom
- B. A process by which a medium energy gamma interacts with an orbital electron causing ejection of the electron and a reduced energy gamma that continues on to cause other interactions
- C. A process by which the removal of one or more orbital electrons is caused by electrostatic force interaction between the charged particles and the orbital electron(s)
- D. A process by which orbital electron energy state is increased without ejection of the electron from the atom
- E. A process by which a positron combines with a free electron leading to the emission of two .51 Mev photons

QUESTION M.03 (1.00)

There are five major fissionable nuclides in the core of which three are also fissile nuclides. Circle the answer below which contains the three nuclides that are both fissionable and fissile.

- A. Uranium 233, Uranium 235, Plutonium 239
- B. Uranium 233, Uranium 235, Uranium 238
- C. Uranium 235, Uranium 238, Plutonium 239
- D. Uranium 235, Plutonium 239, Thorium 232

QUESTION M.04 (1.00)

Circle the answer which correctly corresponds to the following definition.

"Atoms with the same number of neutrons, but with a different number of protons."

- A. Isotope
- B. Isotone
- C. Isobar
- D. Ion

QUESTION M.05 (1.00)

Circle the answer which applies to fuel zoning in the FSU reactor core.

- A. Fuel zoning simulates an equilibrium core to ensure all regions are at equilibrium at the end of 6-year cycle.
- B. Equilibrium is achieved by adjusting the fuel conversion ratio in each fuel zone using a mixture of Uranium, Plutonium and Thorium.
- C. FSU reactor has a fuel conversion ratio of 0.6 which is achieved by uniform fuel zoning.
- D. Region 1 fuel zoning is different from all other fuel regions to account for the regulating rod.

QUESTION M.06 (1.00)

Circle the answer which best describes the Reserve Shutdown System (RSD).

- A. The RSD is the alternate reactor shutdown system if the rods fail to provide adequate shutdown margin when fully inserted.
- B. The RSD is comprised of 37 hoppers which insert automatically or manually in the following configurations: a group of 7 specific regions, 30 specific regions, or all 37 regions at once, through control room discretion.
- C. The RSD is the main control poison used in the FSU reactor and is independent of the control rod system.
- D. The RSD is independent of the rod control system, capable of shutting down the reactor, and initiated through control room discretion in the following configurations: a group of 7 specific regions, 30 specific regions, or all 37 regions at once.

QUESTION M.07 (1.00)

Circle the statement below which correctly describes the use of graphite in the FSV reactor.

- A. Graphite is the structural material in the fuel compacts and acts as a moderator and reflector for neutrons.
- B. The graphite in the reactor is primarily in the active core.
- C. The reflector is the layer of graphite immediately surrounding the core which slows down the neutrons so they can be more readily used.
- D. As a moderator, graphite is equally effective as water in thermalizing fission neutrons.

QUESTION M.08 (4.00)

For the activities described below on a subcritical reactor, place an A in the space provided if the effect on the core is an increase in reactivity, a B if the effect is a decrease in reactivity or a C if both increase and decrease apply.

- 1. Remove a control rod
- 2. Remove spent fuel
- 3. Install new fuel
- 4. Remove reflector
- 5. Vacuum RSD material from core
- 6. Install a control rod
- 7. Install reflector
- 8. Remove burnable poison
- 9. Insert RSD material
- 10. Install startup source
- 11. Install burnable poison
- 12. Remove depleted startup source

DESCRIPTION

QUESTION N.01 (1.00)

Circle the answer below which is a function that is NOT provided by the Reactor Isolation Valve (RIV).

- A. Provide a seal to maintain helium integrity for the Fuel Storage Well.
- B. Provide a platform for the Fuel Handling Machine.
- C. Provide shielding to plant personnel.
- D. Provide a means to level the Auxiliary Transfer Cask.

DESCRIPTION

QUESTION N.02 (3.00)

Indicate the desired sequence for connecting the below listed electrical and pneumatic items of a RIV by placing their associated number in order going from left to right in the spaces provided.

1. Seal source hose
2. RIV power supply cable
3. Vacuum hose
4. Umbilical cable or Jumper plug
5. Backfill hose

---' ---' ---' ---' ---'

DESCRIPTION

QUESTION N.03 (1.00)

Circle the statement below which correctly describes the seal(s) associated with the Reactor Isolation Valve (RIV).

- A. There are 3 pneumatic seals which maintain the air/air or helium/helium interface integrity between the RIV and the PCRV or the Fuel Storage Wells.
- B. There are interlocks associated with the seals to insure that the correct differential pressure and differential atmosphere are maintained when the FHM or the ATC is installed on the RIV.
- C. There is an inflatable seal on the bottom of the RIV to seal it to the structure or equipment and a mechanical seal ("O" ring) to seal the top of the RIV to the FHM or the ATC.
- D. The inflatable seal on the top and bottom of the RIV automatically inflates on loss of power to the RIV or ATC.

DESCRIPTION

QUESTION N.04 (1.00)

Circle the answer below which is NOT an internal RIV interlock.

- A. Differential Pressure
- B. Differential Atmosphere
- C. Loss of Power
- D. RIV to FHM Cask Valve

DESCRIPTION

QUESTION N.05 (3.00)

Select the correct letter from 1-6 items labeled on the simplified system diagram and place them in the space provided in front of the numbered item description.

FUEL HANDLING PURGE SYSTEM (SYSTEM 13)

SEE ATTACHMENT N.05 ON THE NEXT PAGE

- 1. 375 PSIG HELIUM PRESSURE REGULATING VALVE
- 2. 35 PSIG HELIUM PRESSURE REGULATING VALVE
- 3. 13 PSIG HELIUM PRESSURE REGULATING VALVE
- 4. 8 PSIG HELIUM PRESSURE REGULATING VALVE
- 5. 0.3 TO 3.0 MICRON FILTER
- 6. KNOCKOUT DRUM

DESCRIPTION

QUESTION N.06 (2.00)

Place the letter corresponding to the correct component description in the space provided in front of each numbered FHM component.

FHM COMPONENT	COMPONENT DESCRIPTION
-- 1. ARM DRIVE AZIMUTH SYSTEM ()	A. Used to position fuel element monitoring system
-- 2. HOIST DRIVE SYSTEM (Z)	B. Used to house and guide the R drive system during vertical travel
--- 3. ARM DRIVE INDEX SYSTEM (h)	C. Used to monitor fuel elements
-- 4. TELESCOPING MAST TUBE	D. Used to align dowels on border elements
	E. Used to position the telescoping tubes
	F. Used to position the index arm angularly

DESCRIPTION

QUESTION N.07 (2.00)

Select the letter corresponding to the correct motive force/power used by the numbered subassemblies and place it in the space provided in front of each number. (choices may be used more than once or not at all)

- | | |
|---------------|---------------|
| -- 1. Z DRIVE | A. Pneumatic |
| -- 2. _ DRIVE | B. Mechanical |
| -- 3. R DRIVE | C. Electrical |
| -- 4. h DRIVE | D. Hydraulic |

DESCRIPTION

QUESTION N.08 (1.00)

Circle the choice(s) below which correctly indicates ALL the crane and bolt-down conditions when the FHM is on the New Fuel Loading Port.

	CRANE CONDITION	BOLT DOWN CONDITION
A.	Attached or Unattached	Bolted
B.	Unattached	Unbolted
C.	Attached	Unbolted
D.	Attached or Unattached	Unbolted

DESCRIPTION

QUESTION N.09 (1.00)

What is the normal working pressure for the PCRV and internals? Circle the correct answer.

- A. 857psig
- B. 845psig
- C. 704psig
- D. 688psig

DESCRIPTION

QUESTION N.10 (1.00)

What is the source of makeup water for the Reactor Plant Cooling Water System (System 46)? Circle the correct answer listed below.

- A. Feed and Condensate
- B. Circulating Water
- C. Fire Water
- D. Service Water

DESCRIPTION

QUESTION N.11 (1.00)

The Low Temperature Absorber in the Helium Purification System is designed to remove the following impurities. Circle the correct answer.

- A. Tritium, CO₂, Methane, Krypton
- B. CO₂, Methane, Krypton, Xenon
- C. Methane, Krypton, Xenon, Tritium
- D. Krypton, Xenon, Tritium, CO₂

QUESTION D.01 (2.00)

Place a checkmark in the space provided in front of the Technical Specification LCUs which must be met prior to increasing Primary Coolant pressure to 100 psia.

- A. Both safety and rupture discs operable.
- B. All primary and secondary closures operable.
- C. Differential outlet and inlet water temperature <20 degrees F.
- D. Hold down plates in place.
- E. All penetration interspace pressures >primary coolant pressure.
- F. Penetration primary seal leak rate acceptable.

QUESTION 0.02 (1.00)

What group/department is responsibility for major equipment movement planning?
Circle the correct answer.

- A. Reactor Engineering
- B. Reactor Maintenance
- C. Planning and Scheduling
- D. Systems Engineering

QUESTION 0.03 (1.00)

Who is responsible for refueling activities and spent fuel and shipping.
Circle the correct answer.

- A. Nuclear Production Division (NPD)
- B. Nuclear Engineering Division (NED)
- C. Nuclear Licensing and Resource Management Division (NLR)
- D. Reactor Engineering (RE)

QUESTION 0.04 (1.00)

There are four classifications of emergencies at FSU. Indicate their order of increasing severity by placing 1 (least severe) to 4 (most severe) in the space provided.

- Site Area Emergency
- Alert
- General Emergency
- Unusual Event

QUESTION 0.05 (1.00)

To whom does Nuclear Production Administrative Procedure 9 (NPAP-9), Radiation Protection Plan, apply? Circle the correct answer.

- A. General Public, Station Personnel, Non-station Personnel
- B. Station Personnel, Non-station Personnel, Visitors
- C. Non-station Personnel, Visitors, General Public
- D. Visitors, General Public, Station Personnel

QUESTION 0,06 (1.00)

From the list below, circle the item that has the two (2) fuel handling related systems identified in EP-H-2 as most likely sources of potential leakage of radioactive gas.

- A. System 13, System 14
- B. System 14, System 15
- C. System 15, System 16
- D. System 13, System 16

QUESTION 0.07 (1.00)

Upon each entry, a minimum of __ authorized individuals shall be present within the Fuel Storage Building (FSB). Circle the correct answer from the items listed below.

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

QUESTION 0.08 (0.00)

Specification LCO 4.7.2 Fuel Storage Facility, Limiting Conditions for Operation

During storage of irradiated fuel in the Fuel Storage Facility, the following conditions shall be met:

- a) Both cooling water coils must be operating and their outlet cooling water temperatures 150 degrees F or less, for any storage well containing irradiated fuel.
- b) If only one cooling water coil is operating on a storage well, irradiated fuel storage is permissible if the outlet cooling water temperature is 150 degrees or less, and the ventilation system is capable of supplying a total of 12,000 CFM to the Fuel Storage Facility.
- c) The fuel storage wells containing irradiated fuel are maintained at approximately atmospheric pressure.

Assume the conditions listed below are met. Place an "X" in the space provided in front of the condition(s) if the LCO is met.

- 1. a) or b) or c)
- 2. a) or b) and c)
- 3. a) and b) or c)
- 4. a) and b) and c)
- 5. a) and c)
- 6. b) and c)

(QUESTION DELETED FROM EXAMINATION AFTER ADMINISTRATION)

QUESTION 0.09 (2.00)

The Operator's console is divided into six (6) bays. In the space provided in front of the four bay descriptions place the letter that corresponds to the correct bay number.

- | | |
|-------------------------------------|-------------|
| -- 1. Manual Position Control Panel | A. 1000 bay |
| -- 2. Master Control Panel | B. 2000 bay |
| -- 3. Helium Seal Source Monitor | C. 3000 bay |
| -- 4. Automatic Control Panel | D. 4000 bay |
| | E. 5000 bay |
| | F. 6000 bay |

QUESTION 0.10 (1.00)

A complete startup procedure must be used after which of the following conditions listed below? Circle the correct answer.

- A. each shutdown, all repairs
- B. all repairs, all modifications
- C. all calibrations, each shutdown
- D. each shutdown, all modifications

QUESTION 0.11 (1.00)

During defueling operations it becomes necessary to alter the sequence. The following action must be taken.

- A. Authorization is required from NPD
- B. An NCR is initiated and approved by GAs Material Review Board (MRB)
- C. A Procedure Deviation Report is required.
- D. NED prepares and submits a Change Notice (CN) for NPD

QUESTION 0.12 (1.00)

Use of the clamp bypass switch allows the operator to (circle the answer which correctly completes this statement).

- A. continue operation if the fault is understood and found acceptable.
- B. shift from automatic to manual without a long procedure to follow.
- C. verify the associated problems without shutting down.
- D. reverse the action which caused the clamp.

QUESTION P.01 (1.00)

Circle the statement below which is required under Specification LCO 4.5.1- Reactor Building, Limiting Condition for Operation, to handle irradiated fuel within the Reactor Building.

- A. Personnel access to the building is controlled.
- B. The reactor average helium gas inlet temperature is 165 degrees F or less.
- C. All primary and secondary penetration closures and hold-down plates are in place and operable per Specification LCO 4.2.9.
- D. The reactor is maintained in a reactor shutdown or refueling shutdown condition and the reactivity of the core is monitored continuously by at least two neutron flux monitors capable of continuously indicating the neutron flux level within the core.

QUESTION P.02 (1.00)

The (circle the correct answer listed below) is responsible for obtaining the data and performing the shutdown reactivity calculations for anticipated reactivity manipulations to verify adequate shutdown margin is maintained.

- A. Operations Department
- B. Nuclear Engineering Division
- C. Reactor Engineering Department
- D. Nuclear Production Division

QUESTION P.03 (2.00)

Select the appropriate letter from the Limit column and place it in the space provided in front of the alarm received if that limit is exceeded.

ALARM	LIMIT
-- 1. Motion Limit for Radial Head Translation	A. + or - 20 lbs. B. 450 lbs. C. R or D not in Z,R,D interlock zone D. .6" E. Separation above the separation region F. Analog and digital readings disagree
-- 2. Tube Fail	
-- 3. Weight Limit	
-- 4. Incorrect Machine Position	

QUESTION P.04 (4.00)

With respect the Z, R, and O interlocks, place the correct letter(s) in the Interlock Limitations column in the space provided in front of the numbered FHM Position column. (The letters may be used more than once or not at all.)

FHM POSITION	INTERLOCK LIMITATION
___ 1. REACTOR	A. No Z motion below 173.9° with cask valve closed
___ 2. FUEL STORAGE WELL	B. R must be less than 25.8° when Z is above 282.3°
___ 3. LOADING PORT	C. R and O zeroed between 173.9° and 476.4°
	D. R and O must be zeroed when Z is between 173.9° and 282.3°
	E. Cask valve cannot be closed with Z below 173.9°
	F. Cask valve must be opened prior to opening the RIV
	G. O must be rotated to +60 degrees to enable Z movement below 476.4°

QUESTION P.05 (1.00)

Of the four interlocks listed below, circle the answer that is an interlock associated with: (1) the grapple and (2) can NOT be bypassed.

- A. Dowel Pin Engagement
- B. Zero Weight
- C. Load Port Position
- D. Probe Up

QUESTION P.06 (1.00)

During your shift as SSLO of defueling operations, one of the operators notifies you that there has been a steady increase in FHM cooling water outlet temperature. It has increased from 127 degrees F to 145 degrees F in the last 5 hours. Circle the answer which best indicates your concerns for the potential problems associated with this parameter.

- A. Irradiated fuel temperatures could exceed 750 degrees F causing potential over pressure inside the FHM.
- B. The chances of air in leakage and possible moisture problems are greatly increased.
- C. High temperatures in the FHM cause a significant increase in FHM cooling water load and decrease system reliability.
- D. Increase potential of fuel element oxidation occurs at temperatures above 750 degrees F.

QUESTION P.07 (1.00)

While removing a control rod during the defueling, the Control Room Operator informs you that a "Startup Count Rate High" scram has occurred. Circle a item below which best describes the action you would take as the shift fuel handling SRO.

- A. Verify the alarm and if valid, insert the 7 region RSD material
- B. Terminate defueling operations and ensure all PCRV openings closed.
- C. Declare an Unusual Event and evacuate the area.
- D. Terminate defueling operations and insert the RSD material.

QUESTION P.08 (1.00)

Tamper proof seals are used in the Special Nuclear Material Accountability System (SSNM) at FSU. Circle the answer below which is correct with respect to the SSNM system and the seals.

- A. Passive device to detect tampering or entry; personnel performing inspection or handling duties are responsible for seal installation.
- B. The Nuclear Materials Custodian (NMC) is responsible for control and installation of all unused and used seals; installed to minimize accidental breakage.
- C. Seal numbers are recorded in the Seal Log when issued; seals are only issued to Fuel Handler SROs, the NMC or the Reactor Maintenance Supervisor.
- D. Removed seals shall be destroyed in a manner so as to prevent any reuse; the seal log should be the method of documentation of broken or missing seals.

QUESTION P.09 (3.00)

Place an "X" in the space provided in front of the statements below which apply to Fuel Storage Facilities (System 14).

- A. Dry helium or air is maintained in the fuel storage wells to provide cooling.
- B. The Fuel Handling Purge System maintains a pressure of 11 to 12 psia in the fuel storage wells.
- C. The fuel storage well helium is vented through a filter before being discharged to the reactor building exhaust system.
- D. Overpressure protection is provided by a relief valve set at 8 psig.
- E. Fuel storage wells are designed for 10 psig external pressure.
- F. Fuel storage wells are monitored for radioactive gas leakage and excessive temperatures and pressures.

QUESTION Q.01 (1.00)

The Federal Regulation governing standards of protection against radiation is (complete this sentence by circling the correct answer below).

- A. 10 CFR 19
- B. 10 CFR 20
- C. 10 CFR 50
- D. 10 CFR 55

QUESTION Q.02 (1.00)

Circle the item below which presents the greatest hazard to a radiation worker if accidentally ingested.

- A. Alpha
- B. Beta
- C. Gamma
- D. Neutron

QUESTION Q.03 (2.00)

Place the correct Quality Factor in the space provided in front of each item listed below.

- A. Alpha
- B. Beta
- C. Gamma
- D. Neutron

QUESTION G.04 (1.00)

If an SROs age is 27 his accumulated life time dose limit for whole body penetrating radiation is (circle the correct answer).

- A. 3
- B. 18.75
- C. 45
- D. 117

QUESTION Q.05 (1.00)

An exposure to ionizing radiation of 8rem in the last quarter is within the federal limits if received (circle the correct answer).

- A. Accidentally
- B. to the ankles
- C. Anywhere if NRC-4 on file
- D. to skin only

QUESTION Q.06 (1.00)

The maximum expiration date from the date of issue of an RWP is (circle the correct answer).

- A. one shift
- B. one day
- C. one week
- D. one month

QUESTION Q.07 (3.00)

Place an "X" in the space provided in front of each person/position listed who is required to sign a Radiation Work Permit you are requesting during your shift.

- A. HP supervisor for your shift
- B. Shift Supervisor for your shift
- C. Yourself
- D. Security Supervisor for your shift
- E. Anyone who uses the permit
- F. SSLD for your shift

QUESTION Q.08 (3.00)

In the space provided in front of the lettered items place a 1 or 2 or both 1 and 2 as they apply to that item.

- | | |
|--------------------------------------|-------------------------|
| _____ A. RD-2 | 1. Ion Chamber |
| _____ B. Nuclear Instrumentation | 2. Proportional Counter |
| _____ C. RD-5 | |
| _____ D. PNR-4 | |
| _____ E. Gas Filled | |
| _____ F. Low sensitivity, high range | |

QUESTION Q.09 (1.00)

Circle the answer below which would most likely prevent/minimize the spread of CONTAMINATION in an area that is already contaminated.

- A. Ensure the area is well ventilated.
- B. Complete work in area quickly.
- C. Minimize the amount of clothing that can get contaminated.
- D. Assume all materials in area are contaminated.

ANSWER M.01 (1.00)

D

REFERENCE

FH 037.02.01

ANSWER M.02 (2.00)

1. C
2. D
3. B
4. E

REFERENCE

FH 037.02.01

ANSWER M.03 (1.00)

A

REFERENCE

FH 037.02.02

ANSWER M.04 (1.00)

B

REFERENCE

FH 037 02.01

ANSWER M.05 (1.00)

D

REFERENCE

FH 038.02.01

ANSWER M.06 (1.00)

D

REFERENCE

FH 038.02.01

ANSWER M.07 (1.00)

A

REFERENCE

FH 038.02.01

ANSWER M.08 (4.00)

A+C+A+B+A+B+A+A+B+A+B+B

REFERENCE

FH 039.02.01

DESCRIPTION

ANSWER N.01 (1.00)

D

REFERENCE

FH 049.02.01

ANSWER N.02 (3.00)

2,4,1,5,3 #2 is worth 1 point all others .5 points

REFERENCE

FH 049.02.01

ANSWER N.03 (1.00)

C

REFERENCE

FH 049.02.01

ANSWER N.04 (1.00)

D

REFERENCE

FH 049.02.01

ANSWER N.05 (3.00)

A, C, I, E, J, H

DESCRIPTION

REFERENCE

FH 050.02.01

ANSWER N.06 (2.00)

F, E, D, B

REFERENCE

FH 050.02.01

ANSWER N.07 (2.00)

D, C, C, A

REFERENCE

FH 050.02.01

ANSWER N.08 (1.00)

A, C

REFERENCE

FH 050.02.01

ANSWER N.09 (1.00)

D

REFERENCE

ST 101.00.01

ANSWER N.10 (1.00)

A

DESCRIPTION

REFERENCE

ST 105.00.01

ANSWER N.11 (1.00)

C

REFERENCE

ST 112.00.01

ANSWER 0.01 (2.00)

A, B, D, E

REFERENCE

ST 101.00.01

ANSWER 0.02 (1.00)

A

REFERENCE

FHP Manual pg4

ANSWER 0.03 (1.00)

A

REFERENCE

G-6

ANSWER 0.04 (1.00)

3, 2, 4, 1

REFERENCE

RERP

ANSWER 0.05 (1.00)

B

REFERENCE

NPAP-9

ANSWER 0.06 (1.00)

A

REFERENCE

EP-H-2

ANSWER 0.07 (1.00)

B

REFERENCE

CMG-16

ANSWER 0.08 (0.00)

2, 4, 5, 6 (QUESTION DELETED FROM EXAMINATION AFTER ADMINISTRATION)

REFERENCE

ANSWER 0.09 (2.00)

C, B, E, A

REFERENCE

FH 051.02.01

ANSWER 0.10 (1.00)

B

REFERENCE

FH 051.02.01

ANSWER 0.11 (1.00)

C

REFERENCE

FH 051.01.02

ANSWER 0.12 (1.00)

D

REFERENCE

FH 051.02.01

ANSWER P.01 (1.00)

A

REFERENCE

LCD 4.5.1

ANSWER P.02 (1.00)

C

REFERENCE

SR 4.1.4.C-R/4.1.6/D-R

ANSWER P.03 (2.00)

D+E+B+C

REFERENCE

FH 051.02.02

ANSWER P.04 (4.00)

1. A+C+E

2. A+D+E

3. A+E

REFERENCE

FH 051.02.02

ANSWER P.05 (1.00)

B

REFERENCE

FH 051.02.05

ANSWER P.06 (1.00)

D

REFERENCE

T.S. 4.7.2

ANSWER P.07 (1.00)

B

REFERENCE

EP B-1

ANSWER P.08 (1.00)

A

REFERENCE

CMG-B

ANSWER P.09 (3.00)

B, D, E

REFERENCE

ST 106.00

ANSWER 0.01 (1.00)

B

REFERENCE

10 CFR 20

ANSWER 0.02 (1.00)

A

REFERENCE

FH 058.01.01

ANSWER 0.03 (2.00)

20, 1, 1, 5-10

REFERENCE

FH 058.01.01

ANSWER 0.04 (1.00)

C

REFERENCE

FH 058.01.01

ANSWER 0.05 (1.00)

B

REFERENCE

FH 058.01.01

ANSWER 0.06 (1.00)

C

REFERENCE

FH 058.01.01

ANSWER 0.07 (3.00)

B, C, E

REFERENCE

FH 058.01.01

ANSWER 0.08 (3.00)

1, 1&2, 1, 2, 2, 1

REFERENCE

FH 059.01.01

ANSWER 0.09 (1.00)

D

REFERENCE

FH 060.01.01

(***** END OF CATEGORY Q *****)
(***** END OF EXAMINATION *****)