

April 07, 1997

Mr. Hubert J. Miller
Regional Administrator
United States Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Attention : Mr. Donald Florek, Senior Operations Engineer

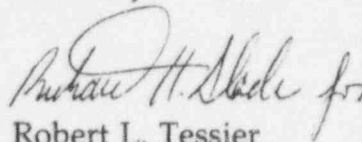
Dear Mr. Miller:

Enclosed please find one (1) Initial License Exam and Exam Outline for Nine Mile Point Nuclear Station Unit 2. This is submitted for your initial review and comment. The Exam Outline is highlighted for your convenience where adjustments were made.

The exam is currently assembled to follow the order in the outline.

If you have any questions, please contact Mr. Rick Slade at (315) 349-1300 or Mr. Bruce Hennigan at (315) 349-1081.

Sincerely,



Robert L. Tessier
Manager Training - Nuclear

RKS/kja

Enc: (1) Initial License Exam
and Exam Outline



A070

GENERIC KNOWLEDGE AND ABILITIES (13 Required)

K/A Reference Number	K/A Topic	Importance
KI.01	Knowledge of how to conduct and verify valve lineups (2)	3.7
KI.02	Knowledge of tagging and clearance procedures (2)	3.9
KI.03	Knowledge of 10CFR20 and related facility radiation control requirements (4)	3.3
KI.07	Knowledge of safety procedures related to electrical equipment (1)	3.3
KI.08	Knowledge of safety procedures related to high temperature (1)	3.1
KI.12	Knowledge of safety procedures related to noise (1)	3.2
KI.14	Knowledge of safety procedures related to confined space (1)	3.2
KI.15	Knowledge of safety procedures related to hydrogen. (1)	3.2

Note: The number in parenthesis shows the number of questions selected to test that K/A topic.

PLANT SYSTEMS GROUP I (28 Required)

System	K/A	K/A Topic	Importance
201001 CRDH	K2.04	SDV isolation Valve solenoids	3.2
201001 CRDH	K4.04	Scramming control rods with inoperative SCRAM solenoid valves (back-up SCRAM valves)	3.6
201001 CRDH	K4.08	Controlling control rod drive header pressure	3.1
201002 RMCS	K1.03	Control rod block interlocks/power operation refueling	3.4
201002 RMCS	G13	Ability to perform specific system and integrated plant procedures during all modes of operation	3.4
202002 Recirc Flow Control	K1.03	Reactor core flow	3.7
202002 Recirc Flow Control	A2.07	Loss of feedwater signal inputs	3.3
203000 RHR/LPCI Injection Mode	K5.02	Core cooling methods	3.5
209001 LPCS	K4.08	Automatic system initiation	3.8
209002 HPCS	A3.01	Valve Operation: BWR - 5, 6	3.3
211000 SLC	A3.08	System Initiation	4.2
212000 RPS	K2.01	RPS motor generator sets	3.2
215003 IRM	K1.02	Reactor manual control	3.6

PLANT SYSTEMS GROUP I (28 Required)

System	K/A	K/A Topic	Importance
215004 SRM	K1.01	Reactor protection system	3.6
215005 APRM	A4.03	APRM back panel switches, meters and ind. lights	3.2
215005 APRM	K3.05	Reactor power indication	3.8
216000 NBI	K5.01	Vessel level measurement	3.1
259001 Feedwater	A2.07	Reactor Water Level Control System Malfunction	3.7
217000 RCIC	G4	Knowledge of system purpose and/or function	3.8
218000 ADS	K5.01	ADS logic operation	3.8
223001 Primary Containment	A3.04	Containment/drywell response during LOCA	4.2
223002 PCIS/NSSSS	K3.16	Shutdown cooling system/RHR	3.2
239002 SRV	K4.05	Allows for SRV operation from more than one location: Plant-Specific	3.6
241000 EHC	K3.06	Bypass valves	4.1
259001 Feedwater	G4	Knowledge of system purpose and/or function	3.4
259002 RWLC	K6.05	Reactor water level input	3.5
261000 SBGT	K1.01	Reactor building ventilation system	3.4

PLANT SYSTEMS GROUP I (28 Required)

System	K/A	K/A Topic	Importance
264000 EDG	K4.02	Emergency generator trips (emergency/LOCA)	4.0

PLANT SYSTEMS GROUP II (19 Required)

System	K/A	K/A Topic	Importance
201003 CRDM	K4.04	The use of either accumulator or reactor water to SCRAM the control rod	3.6
201003 CRDM	K4.05	Rod position indication	3.2
202001 Recirc	A2.01	Jet Pump Failure: Plant Specific	3.4
204000 RWCU	A2.13	Signal received which results in a system isolation	3.4
205000 SDC	K4.03	Low reactor water level:	3.8
215002 RBM	K1.02	LPRM: BWR-3,4,5	3.2
219000 SP Cooling	K1.01	Suppression pool	3.8
226001 Containment Spray	A2.02	Pump trips	3.1
288000 Plant Vent. Systems	K6.01	AC Electrical	2.7
290003 Control Room HVAC	K4.02	System Initiations/Reconfigurations	3.1
230000 SP Spray	K2.02	Pumps	2.8
239001 Main Steam	G4	Knowledge of system purpose and/or function	3.6
256000 Reactor Condensate	A2.01	Pump Trips	3.3

PLANT SYSTEMS GROUP II (19 Required)

System	K/A	K/A Topic	Importance
262001 A.C. Electrical Distribution	K1.01	Emergency generators (diesel/jet)	3.8
262002 UPS	K4.01	Transfer from preferred power to alternate power supplies	3.1
215003 IRMs	K2.01	IRM channels /detectors	2.5
271000 Offgas	K3.01	Condenser vacuum	3.5
272000 Rad Monitor	K4.03	Fail safe tripping of process radiation monitoring logic during conditions of instrument failure	3.6
286000 Fire Protection System	A3.04	System Initiation	3.2

PLANT SYSTEMS GROUP III (4 Required)

System	K/A	K/A Topic	Importance
268000 Radwaste	K5.02	Radiation hazards and ALARA concept	3.1
290002 Reactor Vessel Internals	K5.07	Safety limits	3.9
290002 Reactor Vessel Internals	G5	Knowledge of limiting conditions for operation and safety limits	3.3
234000 Fuel Handling Equipment	K1.04	Reactor manual control system: Plant-Specific	3.3

EMERGENCY AND ABNORMAL PLANT EVOLUTIONS GROUP I (13 Required)

System	K/A	K/A Topic	Importance
295005 Main Turbine Generator Trip	G7	Ability to explain and apply all system limits and precautions	3.1
295005 Main Turbine Generator Trip	AK1.03	Pressure effects on reactor water level	3.5
295006 SCRAM	AA1.02	Reactor water level control system	3.9
295007 High Reactor Pressure	AK2.01	Reactor/turbine pressure regulating system	3.5
295009 Low Reactor Water Level	AK1.05	Natural circulation	3.3
295010 High Drywell Pressure	EA2.03	Suppression pool level	3.8
295014 Inadvertent Reactivity Addition	AK2.06	Moderator temperature	3.4
295015 Incomplete SCRAM	AK2.01	CRD hydraulics	3.8
295024 High Drywell Pressure	EK1.01	Drywell integrity: Plant-Specific	4.1
295024 High Drywell Pressure	EA2.09	Suppression chamber pressure: Plant-Specific	2.9

EMERGENCY AND ABNORMAL PLANT EVOLUTIONS GROUP I (13 Required)

System	K/A	K/A Topic	Importance
295025 High Reactor Pressure	EA2.01	Reactor Pressure	4.3
295031 Reactor Low Water Level	EA2.04	Adequate Core Cooling	4.6
295037 ATWAS	EK2.09	Reactor water level.	4.0

EMERGENCY AND ABNORMAL PLANT EVOLUTIONS GROUP II (19 Required)

System	K/A	K/A Topic	Importance
295001 Partial or Complete Loss of Forced Core Flow Circulation	AK1.02	Power/flow distribution	3.3
295001 Partial or Complete Loss of Forced Core Flow Circulation	AA1.01	Recirculation System	3.5
295002 Loss of Main Condenser Vacuum	G7	Ability to explain and apply all system limits and precautions	3.2
295003 Partial or Complete Loss of A.C. Power	AK1.06	Station blackout: Plant-Specific	3.8
295008 High Reactor Water Level	AK2.03	Reactor water level control	3.6
295012 High Drywell Temperature	AK1.01	Pressure/temperature relationship	3.3

EMERGENCY AND ABNORMAL PLANT EVOLUTIONS GROUP II (19 Required)

System	K/A	K/A Topic	Importance
295013 High Suppression Pool Temperature	EA1.01	Suppression Pool Cooling	4.1
295016 Control Room Abandonment	AK2.01	Remote shutdown panel: Plant-Specific	4.4
295017 High Off-Site Release Rate	AK2.04	Plant ventilation systems	3.1
295018 Partial or Complete Loss of Component Cooling Water	AA1.02	System loads	3.3
295019 Partial or Complete Loss of Instrument Air	AK2.03	Reactor feedwater	3.2
295019 Partial or Complete Loss of Instrument Air	AK2.14	Plant air systems	3.2
295022 Loss of CRD Pumps	AK2.07	Reactor pressure (SCRAM assist): Plant-Specific	3.4

EMERGENCY AND ABNORMAL PLANT EVOLUTIONS GROUP II (19 Required)

System	K/A	K/A Topic	Importance
295026 Suppression Pool High Water Temperature	EK3.01	Emergency/normal depressurization	3.8
295028 High Drywell Temperature	EK2.03	Reactor water level indication	3.6
295029 High Suppression Pool Water Level	EA2.01	Suppression Pool Water Level	3.9
295030 Low Suppression Pool Water Level	EK2.08	SRV discharge submergence	3.5
295033 High Secondary Containment Area Radiation Levels	EK2.04	Standby gas treatment system/FRVS	3.9
295034 Secondary Containment Ventilation High Radiation	EK2.01	Process radiation monitoring system	3.9

BWR RO EMERGENCY AND ABNORMAL PLANT EVOLUTIONS GROUP III (4 Required)

System	K/A	K/A Topic	Importance
295021 Loss of Shutdown Cooling	AK1.02	Thermal stratification	3.3
295032 High Secondary Containment Area Temperature	EA2.01	Area Temperatures	3.8
295023 Refueling Accidents	AK1.01	Radiation exposure hazards	3.6
295021 Loss of Shutdown Cooling	AK3.05	Establishing alternate heat removal flow paths	3.6

**U. S. NUCLEAR REGULATORY COMMISSION
NINE MILE POINT - 2 NUCLEAR POWER STATION
WRITTEN EXAMINATION**

APPLICANT INFORMATION

Name:	Region: 1
Date:	Facility/Unit: Nine Mile Point 2
License Level: RO	Reactor Type: GE
Start Time:	Finish Time:

INSTRUCTIONS

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. Points for each question are indicated in parentheses after the question. The passing grade requires a final grade of at least 80 percent. Examination papers will be picked up 4 hours after the examination starts.

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

Applicant's Signature

RESULTS

Examination Value	____ 100 ____ Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent

Question: 001 (1.0 Point)

While performing a HPCS system lineup check the AO finds that CSH*MOV101 (PUMP SUCT FROM CNDS TK) local Limitorque position indicator does not indicate fully closed.

To verify position, he overrides the motor (declutch) to close the valve.

After manually seating the valve to the rim pull value stamped on the handwheel, he notes the problem on the lineup sheet to document the actions taken.

Which of the following best describes the AO's actions and current valve status?

- a. The actions taken by the AO are in accordance with plant procedures. The valve should be considered OPERABLE.
- b. The actions taken by the AO are in accordance with plant procedures. The valve must be declared INOPERABLE and HPCS operability evaluated.
- c. The actions taken by the AO are NOT in accordance with plant procedures. The valve should be considered OPERABLE.
- d. The actions taken by the AO are NOT in accordance with plant procedures. The valve must be declared INOPERABLE and HPCS operability evaluated.

CORRECT ANSWER: d *
SOURCE:MOD

KI.OI Knowledge of how to conduct and verify valve lineups. 3.7

REF:

N2-VLU-01, Walkdown Order Valve Lineup and Valve Operations, 5.2.2, Motor Operated Valve Operation

O3-OPS-006-341-3-01,R0,EO-1.0

Question: 002 (1.0 Point)

For the following situations concerning "independent verification" of component/system alignments, evaluate each scenario and determine WHICH ONE (1) of the following description is in VIOLATION of station administrative procedures ?

- a. A valve lineup is being performed that could result in an immediate threat to safe operation of the plant. Two operators verify the correct component and verify the intended action. After they both agree it is the correct component and action, the operator positions the valve.
- b. Two equipment operators leave the control room to perform a valve lineup on the "B" Core Spray System. Each equipment operator performs one-half of the total number of valves. They trade valve lineup sheets and verify each others completed valve lineup sheets.
- c. Due to an indicated ground on EJS-US3, EJS-US3 is deenergized by the CSO from the control room. Second verification is performed by a second operator observing control room indication of the breaker.
- d. An equipment operator valves out CRD HCU 30-31 from service and second verification is performed by the CSO in the Control Room verifying the accumulator trouble alarm on HCU 30-31 is received after he has directed the operator to valve out the HCU..

CORRECT ANSWER: d *

SOURCE:MOD

K1.01 Knowledge of how to conduct and verify valve lineups 3.7

REF:

N2-ODP-0001

O3-OPS-006-341-3-01,R0,EO-1.0

Question: 003 (1.0 Point)

In accordance with GAP-OPS-02, "Control of Hazardous Energy and Configuration Tagging", WHICH ONE (1) of the following persons can authorize relocation of a markup on a piece of equipment?

- a. Station Shift Supervisor
- b. Qualified Markup Persons
- c. Chief Shift Operator
- d. Operations Manager - U2

CORRECT ANSWER: c
SOURCE: MOD

K1.02 Knowledge of tagging and clearance procedures. 3.9

REF:

GAP-OPS-02

O3-OPS-006-343-3-01,R1,EO-Q/7.0

Question: 004 (1.0 Point)

In accordance with GAP-OPS-02, *Control of Hazardous Energy and Configuration Tagging*, WHICH ONE (1) of the following persons may surrender a markup if the markup person and the responsible supervisor are not on site ?

- a. Manager Operations
- b. Station Shift Supervisor
- c. Independent Verifier
- d. Controller

CORRECT ANSWER: b
SOURCE:MOD

K1.02 Knowledge of tagging and clearance procedures. 3.9

REF:

GAP-OPS-02,3.10.1.b

O3-OPS-006-341-3-01,R1, EO-Q/8.0

Question: 005 (1.0 Point)

This year you have accumulated 10 REM dose to the skin. WHICH ONE (1) of the following identifies the amount of external dose skin exposure can you receive before you exceed the Legal Annual limit?

- a. 65 Rem
- b. 40 Rem
- c. 30Rem
- d. 5 Rem

CORRECT ANSWER: b

SOURCE: EB

K1.03 Knowledge of 10 CFR 20 and related facility radiation control requirements. 3.3

REF:

GAP-RPP-01

RP/GET TRAINING

Question: 006 (1.0 Point)

You are directed to enter a Locked High Radiation Area to perform a valve lineup. In accordance with GAP-RPP-08, *Control of High, Locked High, and Very High Radiation Areas*, WHICH ONE (1) of the following is needed for this entry ?

- a. a security guard to control access.
- b. to wear Class 4 Protective Clothing.
- c. to be accompanied by an RP Technician.
- d. to carry a copy of the latest survey map with you.

CORRECT ANSWER: c
SOURCE:EB

KI.03 Knowledge of 10 CFR 20 and related facility radiation control requirements. 3.3

REF:

GAP-RPP-08,3.2/3.3

O3-OPS-006-343-3-01,R1,E0-W/4.0

Question: 007 (1.0 Point)

WHICH ONE (1) of the following conditions is permitted by station contamination control procedures ?

- a. During normal rounds in the reactor building the operator enters and exits several Contaminated Areas and frisks as soon as the entries are complete.
- b. An individual working in a Contaminated Area requiring full dressout frisks for contamination after removal of protective clothing and donning of personal clothing.
- c. During normal rounds in the turbine building the operator enters two Contaminated Areas requiring full dressout without frisking between areas.
- d. An operator performing a tour of the reactor and turbine building enters two Contaminated Areas in each building. The operator frisks upon exit from the last area.

CORRECT ANSWER: a

SOURCE: MOD

K1.03 Knowledge of 10 CFR 20 and related facility radiation control requirements. 3.3

REF:

GAP-RR-01, 3.4.2

RP/GET TRAINING

Question: 008 (1.0 Point)

An operator on your shift is applying a markup. He calls the control room and informs you that he is about to enter a high radiation area and wants to know if a separate entry is going to be required for independent verification. WHICH ONE (1) of the following describes the condition necessary to waive these requirements for independent verification ?

- a. SSS can waive the verification provided a licensed reactor operator applies the markup.
- b. Controller can waive the verification provided a qualified auxiliary operator applies the markup.
- c. SSS can waive the verification provided a qualified markup person applies the markup.
- d. Radiation protection can waive the verification provided a licensed reactor operator applies the markup.

CORRECT ANSWER: a

SOURCE: NEW

K1.03 Knowledge of 10 CFR 20 and related facility radiation control requirements. 3.3

REF:

GAP-OPS-02

O3-OPS-006-343-3-01,R1,EO-Q/4.0

Question: 009 (1.0 Point)

WHICH ONE (1) of the following electrical safety equipment practices is NOT correct ?

- a. Class 0 rubber gloves shall be worn when installing protective grounds on de-energized equipment
- b. Rubber gloves are required to be air tested only once per day.
- c. Rubber gloves are required to be given electrical tests every two months.
- d. Class 1 rubber gloves shall be worn when removing fuses from energized circuits greater than 1,000 volts

CORRECT ANSWER: b

SOURCE: MOD

K1.07 Knowledge of safety procedures related electrical equipment. 3.3

REF:

SFT-OSH-0104, Personal Protective Equipment,3.7.4
O3-OPS-006-341-3-01,R1,EO-E/2.0

Question: 010 (1.0 Point)

WHICH ONE (1) of the following requirements is NOT applicable for entry into a high temperature area?

- a. Ice vests can be used when thawed for up to two hours..
- b. Use of respiratory equipment will require use of lower stay time values.
- c. Temperatures above 120 degrees F require a habitability evaluation..
- d. Personnel who experience heat stress symptoms require Site Medical evaluation prior to re-entry .

CORRECT ANSWER: a

SOURCE:MOD

KI.08 Knowledge of safety procedures related to high temperature. 3.1

REF:

SFT-OSH-0111, Heat Stress,3.4.4

O3-OPS-006-343-3-01,R1,EO-E/2.0

Question: 011 (1.0 Point)

WHICH ONE (1) of the following conditions describes when approved hearing protection should be worn ?

- a. in non-posted areas and normal conversations cannot be conducted
- b. in all areas of the power block
- c. in the switchyard
- d. in confined spaces

CORRECT ANSWER: a

SOURCE:NEW

KI.12 Knowledge of safety procedures related to noise 3.2

REF:

SFT-OSH-0104,3.6.3

O3-OPS-006-343-3-01,R1,EO-E/2.0

Question: 012 (1.0 Point)

Work is being performed within a Permit Required confined space. WHICH ONE (1) of the following conditions would require the attendant to order an evacuation of the space?

- a. An uncontrolled hazard is identified within the space.
- b. Turnover with an oncoming attendant is being conducted.
- c. An additional person requests entry into the space.
- d. The attendant is standing outside the space.

CORRECT ANSWER: a

SOURCE: MOD

KI.14 Knowledge of safety procedures related to confined spaces. 3.2

REF:

SFT-OSH-0107, Confined Space Program ,3.7.14

O3-OPS-006-343-3-01,R1,EO-E/2.0

Question: 013 (1.0 Point)

WHICH ONE (1) of the following identifies a safety precaution concerning hydrogen in the Main Generator System?

- a. No smoking in office or shop areas in the Maintenance Building.
- b. Maintaining the generator pressure above atmospheric pressure when the seal oil system is running.
- c. No hydrogen shall be admitted to the generator without the seal oil system running .
- d. Regenerate the Hydrogen gas dryer when the absorber turns from blue to white or pink.

CORRECT ANSWER: c

SOURCE: NEW

K1.15 Knowledge of safety procedures related to hydrogen. 3.4

REF:

N2-OP 27

O2-OPS-001-252-2-00,R2,EO-6.0

O2-OPS-001-247-2-00,R1,EO-6.0

Question: 014 (1.0 Point)

WHICH ONE (1) of the following describes the effect of a loss of power to the SDV vent and drain valve solenoids ?

- a. close to supply pressurized water to the bottom of the drive piston.
- b. close to exhaust water from the top of the drive piston.
- c. open to exhaust air from the diaphragm operated SDV vent and drain valves.
- d. open to exhaust air from the diaphragm operator of the scram inlet and outlet valves.

CORRECT ANSWER: c

SOURCE:MOD

201001 K2.04 SDV Isolation Valve Solenoids
CRDH

3.2

REF:

N2-OP-30

O2-OPS-001-212-2-00,R1,EO-5.0

Question: 015 (1.0 Point)

WHICH ONE (1) of the following describes the Backup Scram Valves ?

- a. normally energized and will de-energize upon a RPS scram signal.
- b. aligned such that two valves in series, one from each RPS trip channel, must actuate to vent the scram air header.
- c. designed such that both RPS channels must trip in order for any one of the valves to actuate.
- d. powered from the RPS motor generators.

CORRECT ANSWER: c

SOURCE: MOD

201001	K4.04	Scramming control rods with inoperative SCRAM solenoid valves (back-up SCRAM valves)	3.6
CRDH			

REF:

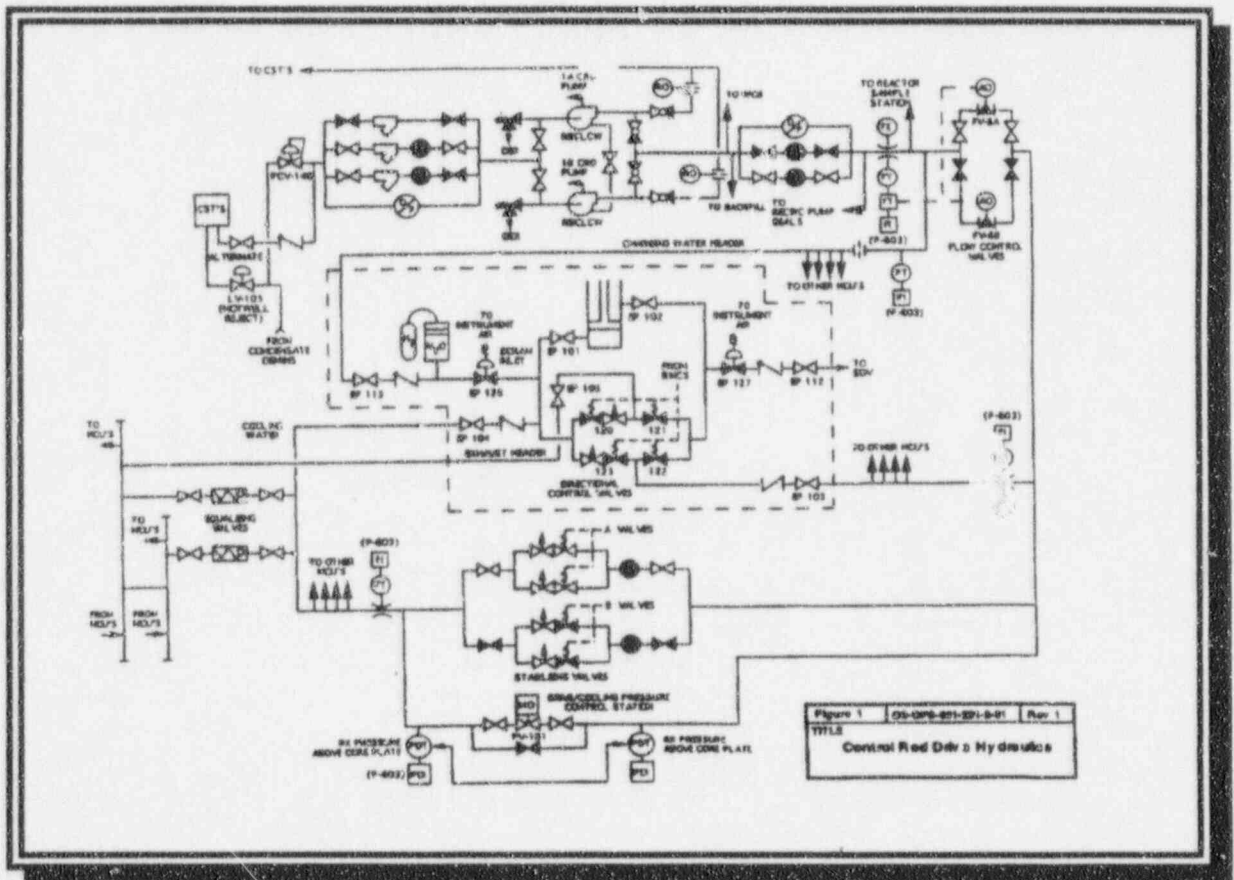
N2 OP 30

O2-OPS-001-212-2-00,R1,EO-3.0

Question: 016 (1.0 Point)

WHICH ONE (1) of the following effects would occur as a result of throttling closed 2RDS*PV101, CRD Drive/Cooling Water Pressure Control Valve?

- a. Decreases control rods insertion time on a scram.
- b. Increases control rod withdrawal speed.
- c. Increases cooling water flow to each CRDM.
- d. Decreases seal flow to the Recirculation Pumps.



CORRECT ANSWER: b *

SOURCE:NEW

201001 K4.08 Controlling control rod drive header press. 3.1

REF:

O2-OPS-001-201-2-01,R3,EO-3.0,4.0b

Question: 017 (1.0 Point)

The reactor is operating at 100% power. APRM Channel C is bypassed for maintenance. The APRM DOWNSCALE annunciator alarms due to APRM Channel E failing downscale. All other APRM channels are OPERABLE.

WHICH ONE (1) of the following will result from this failure ?

- a. RBM Channel A will enforce a rod withdrawal block.
- b. a half-scam on RPS Channel A should have occurred due to APRM Channel E failing downscale.
- c. control rod withdrawal motion is blocked in the RMCS. Control rod insertion is permitted.
- d. both control rod insertion and withdrawal motion is blocked in the RMCS.

CORRECT ANSWER: c *

SOURCE: MOD

201002 KI.03 Control rod block interlocks/power operation refueling 3.4
RMCS

REF:

O2-OPS-001-215-2-02,R0,EO-5.0,8.0

Question: 018 (1.0 Point)

Station procedures direct the operator to reposition an inadvertently scrambled rod using continuous withdrawal mode. WHICH ONE (1) of the following describes the operator actions necessary to perform this action?

- a. Depress and hold the WITHDRAW pushbutton
- b. Depress and hold the CONTINUOUS WITHDRAW pushbutton
- c. Depress and hold the ROD DRIFT RESET and the CONTINUOUS WITHDRAW pushbuttons
- d. Depress and hold the CONTINUOUS WITHDRAW and WITHDRAW pushbuttons

CORRECT ANSWER: d

SOURCE: NEW

201002 RMCS	G13	Ability to perform specific system and integrated plant procedures during all modes of operation	3.4
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REF:
N2-OP-30

O2-OPS-0G1-201-2-02,R1,EO-4.0c,7.0

Question: 019 (1.0 Point)

The plant is at 100% power when condenser vacuum begins to decay. The ASSS orders a rapid power reduction by throttling 2RCS*HYV17A and B, Recirc. FCV.

WHICH ONE (1) of the following is the lowest core flow permitted by SOP101D, Rapid Power Reduction ?

- a. 49 mlb/hr core flow
- b. 41,800 gpm loop flow
- c. 50% core flow
- d. Flow @ 65% power on the power/flow map

CORRECT ANSWER: a

SOURCE: NEW

202002 Recirc Flow Control	K1.03	Reactor core flow	3.7
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REF:

EM 650A

N2-SOP-29

O2-OPS-001-202-2-02,R1,EO-9.0

Question: 020 (1.0 Point)

RCS Flow Control is in Loop Manual. Presently Rx power is 60% and stable. "A" RFP is running. The "B" PFP has just tripped on motor fault. WHICH ONE (1) of the following describes the expected response from the Recirc Flow control system ?

- a. HYV 17A & 17B flow control valves remain at their current positions.
- b. RCS pumps auto down shift to slow speed
- c. HYV17A & 17B flow control valves "run back", driven by the 45% limiter.
- d. Loop controller A and B lock as is due to motion inhibit

CORRECT ANSWER: a *

SOURCE: EB

202002 A2.07 Loss of Feedwater Signal Inputs
Recirc
Flow
Control

3.3

REF:

O2 -OPS -001-202-2-02 R1 ,EO-8.0

Question: 021 (1.0 Point)

Following a plant transient actual RPV water level is -20" and there is no source of injection into RPV available. Therefore, the crew is performing Steam Cooling without injection in accordance with N2-EOP-C3, "Steam Cooling."

WHICH ONE (1) of the following core cooling methods is to be used when an RHR pump is started ?

- a. Core Submergence
- b. Steam Cooling with injection
- c. Steam Cooling without injection
- d. Spray Cooling with injection

CORRECT ANSWER: a *

SOURCE: NEW

203000 RHR/LPCI: K5.02
Injection Mode

Core cooling methods

3.5

REF:

N2-EOP-BASIS

O2-OPS-006-344-2-15,R0,EO-3.0

O2-OPS-006-344-2-21,R0,EO-2.0

Question: 022 (1.0 Point)

The plant is operating at 60% RX power. The following conditions occur:

- A high drywell pressure is received
- The RX scrams
- RX water level stabilizes at 165 inches
- RX pressure is 975 psig and stable
- Turb. bypass valves are controlling pressure
- Drywell pressure is 2.3 psig.

WHICH ONE (1) of the following describes the status of the Low Pressure Core Spray system?

- a. LPCS will be running and injecting into the vessel.
- b. LPCS will be running with the injection valve shut.
- c. LPCS will remain in standby unless water level drops to 17.8 inches.
- d. LPCS will be running in full flow test mode.

CORRECT ANSWER: b

SOURCE: EB

209001 K4.08 Automatic system initiation
LPCS

3.8

REF:

O2-OPS-001-209-2-00,R1,EO-4.0b

Question: 023 (1.0 Point)

High Pressure Core Spray was manually initiated when RPV water level was 150 inches following a scram due to a loss of all feedwater pumps. Assuming NO operator actions, and reactor pressure is maintained at 920 psig by the turbine bypass valves, WHICH ONE (1) of the following describes the expected response of 2CSH*P1 injection valve?

- a. 2CSH*P1 injection valve will close at 202.3 inches and remain closed until manually reset at P601.
- b. 2CSH*P1 injection valve cycles to maintain level between 108.8 and 202.3 inches automatically.
- c. 2CSH*P1 injection valve cycles to maintain level between 159.3 and 202.3 inches automatically.
- d. 2CSH*P1 injection valve will not close at 202.3 inches and must be manually closed at 250 inches.

CORRECT ANSWER: b

SOURCE: MOD

209002 A3.01 Valve Operation: BWR 5,65
HPCS

3.3

REF:

O2-OPS-001-206-2-00,R1,EO-4.0c,9.0

Question: 024 (1.0 Point)

A plant transient has occurred which requires the injection of boron into the RPV via SLS. The operator places the SLS*P1A and SLS*P1B control switches to the START position. WHICH ONE (1) of the following is the expected response of SLS*P1A and SLS*P1B to the initiation if VEX-3B fails to fire?

- a. SLS*P1A and SLS*P1B should start and supply design flow to the RPV
- b. SLS*P1A and SLS*P1B should start and supply ½ design flow to the RPV
- c. SLS*P1A should start (SLS*P1B remains off) and supply ½ design flow to the RPV
- d. SLS*P1A should start (SLS*P1B remains off) and supply design flow to the RPV

CORRECT ANSWER: a *

SOURCE: EB

211000 A3.08 System Initiation
SLC

4.2

REF:
O2-OPS-001-211-2-00,R2,EO-4 0a,8.0

Question: 025 (1.0 Point)

The plant is in Operational Condition 1 with reactor power at 25% of rated. The following plant component/equipment status exists:

- RPS trip logic channel "A1" is de-energized for maintenance.

For the plant conditions described above, WHICH ONE (1) of the following statements would best describe the initial AUTOMATIC plant/system response to a loss of power to 2NJS-US6?

- a. The reactor will NOT scram but the scram discharge volume will isolate.
- b. The reactor will scram and the scram discharge volume will not isolate.
- c. The reactor will scram and the scram discharge volume will isolate.
- d. The reactor will NOT scram and the scram discharge volume will not isolate.

CORRECT ANSWER: b *
SOURCE: NEW

212000 K2.01 RPS motor generator sets
RPS

3.2

REF:
N2-OP-97, Reactor Protection System
O2-OPS-001-212-2-00,R1,EO-4.0a,5.0

Question: 026 (1.0 Point)

WHICH ONE (1) of the following describes the condition that will cause a rod withdrawal block during a reactor startup with power currently on IRM Range 2.

- a. SRM counts fall below 100 cps with an SRM detector partially withdrawn.
- b. SRM counts fall below 100 cps with an SRM detector fully inserted.
- c. SRM counts exceed 10,000 cps on an SRM.
- d. SRM counts exceed 100 cps with an SRM detector partially withdrawn.

CORRECT ANSWER: a

SOURCE: MOD

215003 K1.02 Reactor manual control
IRM

3.6

REF:

O2-OPS-001-201-2-02,R1,EO-4.0c

Question: 027 (1.0 Point)

WHICH ONE (1) of the following statements describes the shorting links that are used in reactor protection system (RPS)?

- a. Installation of the shorting links enables a scram if any single SRM, IRM or APRM channel trips.
- b. Removal of the shorting links activates the SRM scrams in a coincidence of one-out-of-two-twice logic scheme.
- c. Installation of the shorting links activates the SRM, IRM and APRM scrams in one-out-of-two-twice logic schemes.
- d. Removal of the shorting links enables a scram if any single SRM, IRM or APRM channel trips.

CORRECT ANSWER: d

SOURCE: MOD

215004 K1.01 Reactor protection system
SRM

3.6

REF:

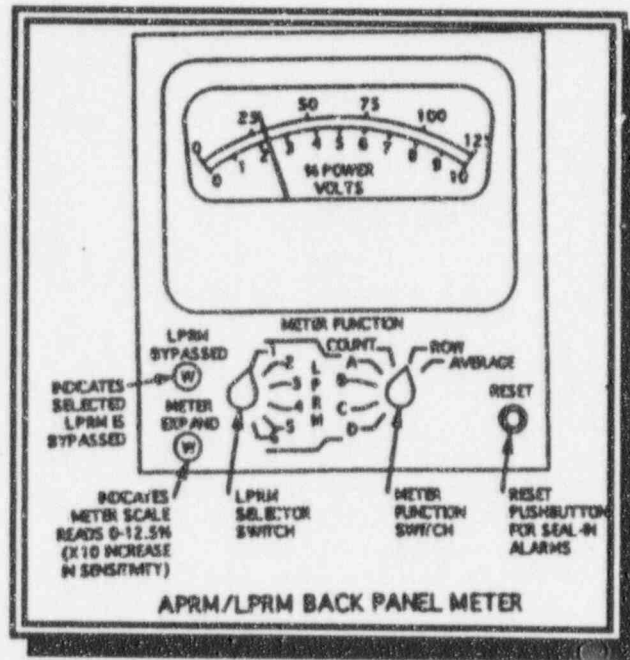
O2-OPS-001-212-2-00,R1,EO-4.0a/c

Question: 028 (1.0 Point)

A Local Power Range Monitor (LPRM) detector has failed upscale. The UPSCALE indicating light for this detector is lit. Local labeling indicates that this LPRM is 3B-40-41.

WHICH ONE (1) of the following identifies what APRM switch positions must be established to read this LPRM detector's output ?

- a. Meter Function switch to position "B". LPRM Selector switch to position "2".
- b. Meter Function switch to position "C". LPRM Selector switch to position "3".
- c. Meter Function switch to position "B". LPRM Selector switch to position "3".
- d. Meter Function switch to position "C". LPRM Selector switch to position "1".



CORRECT ANSWER: c

SOURCE: MOD

215005 A4.03 APRM back panel switches, meters and ind. lights

3.2

APRM

REF:

O2-OPS-001-215-2-02,R0,EO-7.0d/e,8.0

Question: 029 (1.0 Point)

WHICH ONE (1) of the following describes the APRM AGAF portion of the Core Periodic printout (BELOW), for APRM B ?

- a. it is indicating less than actual core power.
- b. it is indicating more than actual core power.
- c. it is indicating the same as actual core power.
- d. it is invalid, because it is bypassed.

APRM CALIBRATION						
	A	B	C	D	E	F
READING	87.9	87.4	88.0	87.8	88.4	87.8
AGAF	0.999	1.005	0.998	1.001	0.993	1.001

CORRECT ANSWER: a

SOURCE: MOD

215005 K3.05 Reactor power indication 3.8
APRM

REF:

O2-OPS-001-215-2-02,R0,EO-4.0

Question: 030 (1.0 Point)

WHICH ONE (1) of the following describes plant conditions for which the FUEL ZONE range level instrument will accurately indicate reactor vessel water level? (Assume reactor water level is constant in each of the following.)

- a. Operational Condition 3, RPV pressure 0 psig, and both recirculation pumps secured.
- b. Operational Condition 3, RPV pressure 0 psig, and one recirculation pump in service
- c. Operational Condition 4, RPV pressure 0 psig, and both recirculation pumps secured.
- d. Operational Condition 5, refueling in progress, and both recirculation pumps secured.

CORRECT ANSWER: a *
SOURCE: MOD

216000 K5.01 Vessel level measurement
NBI

3.1

REF:

O2-OPS-001-216-2-01,R2,EO-4.0d

Question: 031 (1.0 Point)

During normal full power operation, the selected (Reactor Water Level Control) Narrow Range Level Channel (A) fails upscale. Assume the CSO immediately takes manual control at the respective feedwater level controllers and maintains level between 178.3 and 187.3 inches, WHICH ONE (1) of the following is the expected automatic station response from this single selected instrument failure ?

- a. all operating RFPs trip and the main turbine will remain on line.
- b. all operating RFPs trip and the main turbine trips.
- c. all operating RFPs remain in service and the main turbine trips.
- d. all operating RFPs remain in service and the main turbine remains on line.

CORRECT ANSWER: d

SOURCE: NEW

259001 A2.07 Reactor Water Level Control System Malfunction 3.7
Feedwater

REF:

O2-OPS-001-216-2-01,R2,EO-8.0

O2-OPS-001-259-2-02,R2,EO-8.0

Question: 032 (1.0 Point)

Following an automatic initiation, RCIC speed is observed to be zero, the RCIC turbine trip throttle valve (2ICS*MOV150) is open and the steam supply valve (2ICS*MOV120) is closed. WHICH ONE (1) of the following conditions could have caused this RCIC response.

- a. RCIC Pump suction low pressure
- b. RCIC Manual Isolation
- c. Low reactor pressure
- d. Reactor water level high (L8)

CORRECT ANSWER: d *

SOURCE: NEW

217000	G4	Knowledge of System Purpose and/or function	3.8
RCIC			

REF:

O2-OPS-001-217-2-00,R2,EO-4.0c

Question: 033 (1.0 Point)

The following plant conditions exist at $T = 0$:

- Reactor water level 10 inches
- Reactor pressure 900 psig
- Drywell pressure 1.2 psig
- All ECCS pumps are running
- All of the MSIV's closed

WHICH ONE (1) of the following is TRUE concerning ADS initiation?

- a. ADS will not initiate.
- b. ADS will initiate immediately.
- c. ADS will initiate at $T = 105$ seconds.
- d. ADS will initiate at $T = 115$ seconds.

CORRECT ANSWER: c

SOURCE: NEW

218000 K5.01 ADS logic operation
ADS

3.8

REF:
N2-OP-34

O2-OPS-001-218-2-01,R1,EO-4.0c

Question: 034 (1.0 Point)

Given that:

- Reactor pressure is 500 psig
- Suppression Pool Temperature is 160 degrees .F

In accordance with N2-EOP-PC, "Primary Containment Control", WHICH ONE (1) of the following identifies the correct Heat Capacity Level Limit ?

- a. 192 feet
- b. 193.8 feet
- c. 198.8 feet
- d. 199.5 feet

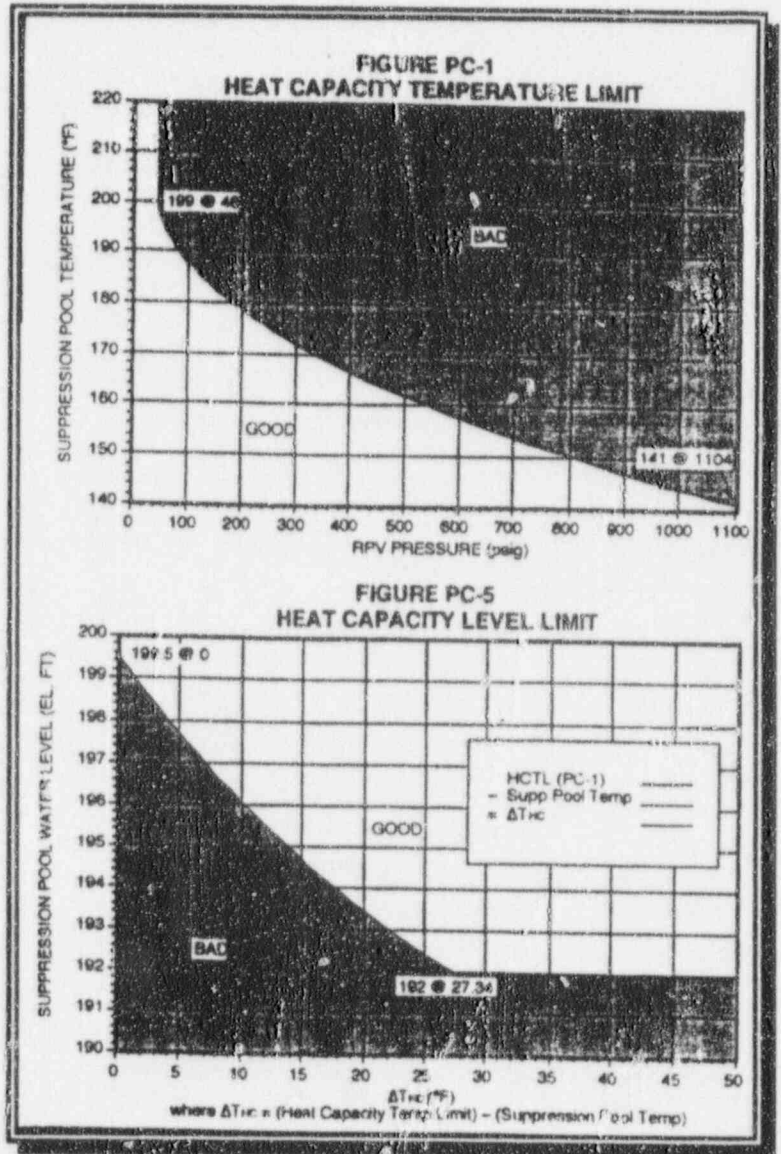
CORRECT ANSWER: c

SOURCE: MOD

REF:

N2-EOP PCC

O2-OPS-006-344-2-21,R0,EO-2.0



Question: 035 (1.0 Point)

During shutdown testing with RHR "A" in shutdown cooling a high RPV pressure isolation signal is inadvertently generated in the Division 1 isolation logic. WHICH ONE (1) of the following describes the expected system response to this signal?

- a. "A" pump trips and both SDC suction isolation valves close.
- b. "A" pump remains running and the Division 1 SDC suction isolation valve closes.
- c. "A" pump trips and the Division 1 SDC suction isolation valve closes.
- d. "A" pump remains running and both SDC suction isolation valves close.

CORRECT ANSWER: a *

SOURCE: NEW

223002 K3.16 Shutdown cooling system/RHR 3.2
NSSS/PCIS

REF.
807E152TY
N2-OP-31
N2-OP-83

O2-OPS-001-223-2-02,R1,EO-8.0

Question: 036 (1.0 Point)

A control room evacuation has been executed per SOP-78. WHICH ONE (1) of the following describes the status of the SRV's following control being established at the remote shutdown panel ?

- a. 2MSS*PSV121, 127, 129, and 137 cannot be operated from the Main Control Room but function from the Remote Shutdown Panel.
- b. 2MSS*PSV121, 127, 129, and 137 can be operated from both the Main Control Room and the Remote Shutdown Panel.
- c. 2MSS*PSV121, 127, 129, and 137 can be operated from the Main Control Room but not from the Remote Shutdown Panel.
- d. 2MSS*PSV121, 127, 129, and 137 cannot be operated from either the Main Control Room or the Remote Shutdown Panel.

CORRECT ANSWER: a

SOURCE: NEW

239002	K4.05	Allows for SRV operation from more than one location: Plant-Specific	3.6
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REF:

N2-OP-78

O2-OPS-001-296-2-00,R0,EO-7.0d,9.0

Question: 037 (1.0 Point)

The generator is connected to the grid and the plant is at 20% power when the operating EHC pump trips and the backup pump will NOT start. There are no EHC oil leaks.

WHICH ONE (1) of the following describes the response of the turbine control valves and bypass valves?

- a. Control valves will remain AS-IS; Bypass valves will operate until EHC fluid pressure is lost.
- b. Control valves will CLOSE; Bypass valves will operate until EHC fluid pressure is lost.
- c. Control valves will CLOSE; Bypass valves will remain closed.
- d. Control valves will open; Bypass valves will remain closed.

CORRECT ANSWER: b *

SOURCE: NEW

241000 K3.06 Bypass valves 4.1

REF:

O2-OPS-001-248-2-00,R2,EO-4.0b,8.0

Question: 038 (1.0 Point)

The plant is operating at 100% reactor power. The following condition exists:

- "A" and "B" Reactor feed pumps are in service.
- "C" Reactor Feed Pump is in standby.

WHICH ONE (1) of the following describes the effect of a Loss of Instrument Air will have on the Feedwater System?

- a. The feedpump high pressure / low flow control valves (LV-10's) fail closed causing a reactor scram at L3.
- b. The feedpumps will trip at L8 due to the high pressure / low flow valves (LV-55's) failing open.
- c. The standby Reactor Feed Pump will auto start to aid in supplying water to the reactor due to a low reactor feedpump suction pressure.
- d. The Feedpump min. flow valves will fail open and flow will be diverted to the Main Condenser causing a reactor scram at L3.

CORRECT ANSWER: d *

SOURCE: EB

295019	AK2.03	Reactor	3.2
Partial or		feedwater	
Complete			
Loss of			
Instrument			
Air			

REF:

O2-OPS-001-259-2-01 ,R2,EO-8.0

N2-SOP-19

Question: 039 (1.0 Point)

The following conditions exist:

- The reactor feedwater level control system has malfunctioned.
- Reactor water level has risen to 210 inches and continues to rise slowly.

WHICH ONE (1) of the following identifies the reactor water level range indicator that MUST be used to determine water level under these conditions ?

- a. Fuel zone
- b. Narrow Range
- c. Upset Range
- d. Wide Range

CORRECT ANSWER: c
SOURCE: EB

259002 K6.05 Reactor water level input
RWLC

3.5

REF:
O2 -OPS -001-216-2-01,R0 ,EO-5.0

Question: 040 (1.0 Point)

SBGT has automatically started. WHICH ONE (1) of the following signals ALONE could have directly caused SBGT to start?

- a. Drywell temperature of greater than 135°F.
- b. Reactor Building Area Radiation Monitor High alarm.
- c. Low flow on the SBGT fan with it's fan in AUTO
- d. Reactor vessel water level below 108.8 inches

CORRECT ANSWER: d

SOURCE: NEW

261000 K1.01 Reactor building ventilation system
SBGT

3.4

REF:

N2-OP-61B

O2-OPS-001-261-2-01,R2,EO-4.0c,5.0

Question: 041 (1.0 Point)

2 EGS*EG1 started on undervoltage and closed into 2ENS*SWG101. Annunciator 825127, EDG 1 PROT LOCKOUT RELAY TRIP was then received. The diesel generator breaker opened and the diesel shutdown. WHICH ONE (1) of the following is the likely cause of the diesel generator breaker trip and subsequent diesel shutdown?

- a. A bus overcurrent condition.
- b. A generator differential overcurrent.
- c. A underfrequency condition on 2ENS*SWG101.
- d. A generator high jacket water temperature.

CORRECT ANSWER: b

SOURCE: EB

264000	K4.02	Emergency generator trips (emergency/LOCA)	4.0
EDG			

REF:

O2-OPS-001-264-2-01,R2,EO-4.0c,8.0

Question: 042 (1.0 Point)

The scram accumulator for control rod 18-19 indicates 0 psig. Reactor pressure is 530 psig. If a scram signal is generated, WHICH ONE (1) of the following describes the scram capability for rod 18-19 ?

- a. Rod will scram with slower than normal scram times.
- b. Rod will scram with normal scram times.
- c. Rod will partially insert.
- d. Rod will NOT scram.

CORRECT ANSWER: a *

SOURCE: MOD

201003	K4.04	The use of either accumulator or reactor water to	3.6
CRDM		SCRAM the control rod	

REF:

O2-OPS-001-201-2-01,R3,EO-3.0,8.0

O2-OPS-001-201-2-03,R1,EO-5.0

Question: 043 (1.0 Point)

The plant is at 100% power, EOL, when a reactor scram occurs. No operator actions have been taken. Rod 22-27 was selected just prior to the scram. WHICH ONE (1) of the following identifies why is the 4-rod display blank?

- a. The scram has not been reset
- b. It is receiving faulted data from RPIS
- c. A selected rod is automatically deselected on a scram
- d. A full core ATWS is in progress.

CORRECT ANSWER: a
SOURCE: NEW

201003 K4.05 Rod position indication
CRDM

3.2

REF:

O2-OPS-001-201-2-02,R1,EO-4.0b

Question: 044 (1.0 Point)

The plant is at 100% power. While performing the daily surveillance log it is determined that one of the non-calibrated jet pumps has separated at the slip fit .WHICH ONE (1) of the following describes the Technical Specification concern with this failure?

- a. Excessive core internals vibration during single loop operation.
- b. Increased blowdown area and reduced reflood capability during a LOCA.
- c. Excessive stress on the vessel nozzles and bottom head region during normal operation.
- d. Inaccuracy of the Fuel Zone RPV level instruments during plant transients and design basis events.

CORRECT ANSWER: b

SOURCE: NEW

202001 A2.01 Jet pump failure: plant specific 3.4
Recirc

REF:

U2 TS basis 3/4.4.1

O2-OPS-001-101-2-01,R1,EO-8.0,11.0

Question: 045 (1.0 Point)

During a plant transient, the RWCU F/D INLET TEMP HI-HI annunciators is received. (602319) Investigation reveals that 2WCS*MOV112 is closed and 2WCS*MOV102 is open. Both Cleanup Pumps have tripped.

Based on these conditions, WHICH ONE (1) of the following is CORRECT ?

- a. A high Non-regenerative Heat Exchanger outlet temperature caused the isolation. The system responded properly.
- b. A high Non-regenerative Heat Exchanger outlet temperature caused the isolation. The inboard isolation valve (MOV-102) should have automatically closed.
- c. A high Non-regenerative Heat Exchanger outlet temperature should only have caused the filter demineralizers to go into hold. A failure of the outboard isolation valve(MOV-112) may have occurred.
- d. A high Non-regenerative Heat Exchanger outlet temperature should have only isolated the drain flow control valve.

CORRECT ANSWER: a
SOURCE: NEW

204000	A2.13	Signal received which results in system isolation	3.4
RWCU			

REF:
O2-OPS-001-204-2-01,R1,EO-4.0c,8.0

Question: 046 (1.0 Point)

WHICH ONE (1) of the following identifies the functional isolation signals to the SDC suction isolation valves with shutdown cooling established at the Remote Shutdown panels ?

- a. Automatically isolate on low RPV water level (159.3 Inches) ONLY.
- b. Automatically isolate on high RPV pressure (128 psig) ONLY.
- c. Automatically isolate on EITHER low RPV water level (159.3 Inches) or high RPV pressure (128 psig).
- d. Will not automatically isolate when controlled from PNL405.

CORRECT ANSWER: c

SOURCE: MOD

205000 K4.03 Low reactor water level:
SDC

3.8

REF:

O2-OPS-001-296-2-00,R0,EO-4.0c,9.0

Question: 047 (1.0 Point)

WHICH ONE (1) of the following describes which LPRMs input into the Rod Block Monitors (RBM)?

- a. With a rod selected that has 2 LPRM strings around it, each RBM will receive 4 LPRM inputs with 'A' & 'C' detectors inputing to RBM 'A' and 'B' & 'D' to RBM 'B'
- b. With a rod selected that has 4 LPRM strings around it, each RBM will receive 16 LPRM inputs with 'A' & 'C' detectors inputing to RBM 'A' and 'B' & 'D' to RBM 'B'
- c. With a rod selected that has 3 LPRM strings around it, each RBM will receive 5 LPRM inputs with 'A' & 'B' detectors inputing to RBM 'A' and 'C' & 'D' to RBM 'B'
- d. With a rod selected that has 3 LPRM strings around it, each RBM will receive 3 LPRM inputs with 'A' & 'C' detectors inputing to RBM 'A' and 'B' & 'D' to RBM 'B'

CORRECT ANSWER: a *

SOURCE: MOD

215002 K1.02 LPRM: BWR-3,4,5
RBM

3.2

REF:

O2-OPS-001-215-2-02,R0,EO-3.0,4.0a

Question: 048 (1.0 Point)

WHICH ONE (1)of the following conditions will allow the suppression pool cooling valve (FV -38A) to be opened during a LOCA ?

- a. the differential across the valve is <130 psig.
- b. the respective LPCI Injection Valve (MOV-24) is shut.
- c. the respective LPCI Injection valve (MOV-24) seal-in circuitry is removed.
- d. the respective LPCI Injection Valve (MOV-24) is shut and a high drywell pressure exists.

CORRECT ANSWER: b

SOURCE: NEW

219000 K1.01 Suppression pool
SP Cooling

3.8

REF:

O2-OPS-001-205-2-00,R1,EO-4.0c,9.0

Question: 049 (1.0 Point)

The normal operating procedures limit operation of the RHR system to WHICH ONE (1) of the following lineups ?

- a. One loop of RHR in SP cooling or spray at a time to prevent loss of both loops during a loss of bus power and subsequent LOCA.
- b. One loop in drywell spray at a time to prevent runout of the pump during a LOCA.
- c. One loop on minimum flow at a time to prevent loop drain down during a LOCA with a subsequent loss of bus power.
- d. Neither loop in SP spray unless in the EOP's to prevent exceeding the vacuum breaker rating during normal operation.

CORRECT ANSWER: a

SOURCE: NEW

226001 A2.02 Pump trips
Containment
Spray

3.1

REF:

N2-OP-31, RHR

O2-OPS-001-205-2-00,R1,EO-6.0

Question: 050 1.0 Point)

While operating at power a loss of 2NJS-US2 occurs resulting in a secondary containment isolation and SBT system auto start. WHICH ONE (1) of the following conditions explains this isolation response?

- a. A false LOCA signal was generated.
- b. A low ventilation exhaust flow initiated the isolation.
- c. Closure of the system isolation dampers generated the isolation signal.
- d. A false high exhaust radiation signal was generated.

CORRECT ANSWER: b *

SOURCE: NEW

288000 K6.01 AC Electrical
Plant Vent
Systems

2.7

REF:
N2-OP- 52 section B
O2-OPS-001-288-2-03,R1,EO-5.0,8.0

Question: 051 (1.0 Point)

WHICH ONE (1) of the following conditions, in the Control Room Ventilation Radiation Monitoring System, will actuate the isolation mode of the Control Room Ventilation System ?

- a. The "A" and "C" RE-18's loose power.
- b. The "B" and "C" RE-18's trip INOP.
- c. The "D" RE-18 fails downscale.
- d. The "A" RE-18 reaches it's upscale trip setpoint.

CORRECT ANSWER. a *

SOURCE: NEW

290003 K4.02 System Initiation/Reconfigurations.
Control
Room
HVAC

3.1

REF:

O2-OPS-001-288-2-02,R0,EO-5.0

O2-OPS-001-272-2-01,R2,EO-8.0

Question: 052 (1.0 Point)

The plant was operating at 100% power with a RCIC surveillance in progress and RHR "A" is in suppression pool cooling. 2EGS*EG1 is out of service for maintenance. There are no other out of service equipment.

While in this condition a loss of line 5 and 6 occurs, and all equipment functions as expected under these conditions. Assume no operator actions. WHICH ONE (1) of the following identifies the final status of RHR "A" ?

- a. RHR "A" is in suppression pool cooling mode
- b. RHR "A" is in LPCI mode
- c. RHR "A" is not running
- d. RHR "A" is running on minimum flow

CORRECT ANSWER: c *

SOURCE: NEW

230000 K2.02 Pumps
SP Spray

2.8

REF:

O2-OPS-001-205-2-00,R1,EO-5.0,8.0

Question: 053 (1.0 Point)

The following conditions exist:

- A reactor startup is in progress
- The mode switch is in STARTUP
- The main turbine is tripped.
- A valid MSIV isolation has occurred.
- The reactor did NOT scram (No ATWS conditions exists).

WHICH ONE (1) of the following was the only signal that could have generated the MSIV isolation?

- a. Low reactor water level
- b. High main steam line flow
- c. High main steam line radiation
- d. Low main steam line pressure

CORRECT ANSWER: b *

SOURCE: EB

239001	G4	Knowledge of system purpose and/or function	3.6
Main Steam			

REF:

O2-OPS-001-212-2-00,R1,EO-4.0c,5.0

O2-OPS-001-239-2-00,R2,EO-4.0c,5.0,8.0

Question: 054 (1.0 Point)

A plant start up is in progress. The following conditions exist:

- Reactor Power is 78%
- Three Condensate pumps are operating.
- Two Condensate Booster pumps are operating.

WHICH ONE (1) of the following describes the effect on the plant if two of the three operating heater drain pumps trip, and condensate flow is 12,250 gpm?

- a. All three condensate pumps would trip.
- b. Both Condensate Booster pumps would trip but the Condensate pumps would remain running.
- c. The Standby Condensate Booster pump would auto start.
- d. All the Condensate and Condensate Booster pumps would trip.

CORRECT ANSWER: c
SOURCE: EB

256000 A2.01 Pump Trip
Reactor
Condensate

3.3

REF:
O2-OPS-001-256-2-01,R2 ,EO-4.0c

Question: 055 (1.0 Point)

WHICH ONE (1) of the following describes the start condition(s) that will start the Division I and II Diesel Generators in the emergency mode but will not start the Division III Diesel Generator in the emergency mode?

- a. Loss of bus voltage on the respective electrical bus.
- b. High drywell pressure or low RPV level in the respective division.
- c. Local manual start at the respective DG control panel.
- d. Respective Panel 601 Divisional manual initiation pushbutton.

CORRECT ANSWER: a *

SOURCE: EB

262001	K1.01	Emergency generators (diesel/jet)	3.8
A.C.			
Electrical			
Distribution			

REF:

N2, 945E400, Sht. 4,5

N2-ARP-01, 00, Att.AN852303

N2-OP-100A, 06, Sect.B2

O2-OPS-001-264-2-02,R3,EO-4.0c,5.0,8.0

O2-OPS-001-264-2-01,R2,EO-4.0c,5.0,8.0

Question: 056 (1.0 Point)

Locally at UPS 2B, the following conditions exist:

- CB51 AC Input Breaker is closed
- CB52 Battery Input Breaker is closed
- CB2 Maintenance Supply Input Breaker is open
- S5 Manual Switch is in the UPS position
- UPS2B inverter output is supplying the loads

With all other plant electrical distribution breakers in the correct lineup, WHICH ONE (1) of the following describes the effect of depressing the REVERSE TRANSFER pushbutton for UPS2B?

- a. UPS loads remain energized and UPS 2B transfers from Normal AC to DC power supply.
- b. UPS loads de-energize momentarily while UPS 2B static switch transfers from Normal AC to Maintenance supply.
- c. UPS loads remain energized and REVERSE TRANSFER is blocked due to "Sync Loss".
- d. UPS loads de-energize and UPS 2B static switch transfers load from the inverter output to Maintenance supply

CORRECT ANSWER: d *

SOURCE: EB

262002	K4.01	Transfer from preferred power to alternate power supplies	3.1
UPS			

REF:

O2-OPS-001-262-2-03,R2 ,EO-7.0d

Question: 057 (1.0 Point)

A reactor startup is in progress, with reactor power approaching 1%, when a complete loss of 24/48 VDC Distribution Panel 300B occurs.

WHICH ONE (1) of the following describes how this condition will affect the reactor startup?

- a. A full reactor scram will occur.
- b. A half scram will occur and half of the SRM and IRM detectors will lose power.
- c. The reactor will remain at power but ALL reactor power indications will be lost.
- d. The reactor startup can continue but the IRM detectors cannot be withdrawn from the core until electrical power is restored.

CORRECT ANSWER: b *

SOURCE: EB

215003 K2.01 IRM channels/detectors

2.5

REF:

O2-OPS-001-263-2-01,R2 ,EO-5.0,8.0

N2-OP-73B, , Sect. I

Question: 058 (1.0 Point)

The plant is operating at 100% power when annunciator 851326, OFFGAS RADIATION HIGH is received. WHICH ONE (1) of the following statements describes what will happen due to this condition ?

- a. 2OFG*AOV103, "OFFGAS EXHAUST TO MAIN STACK" will close after the alarm is received and will cause a loss of condenser vacuum
- b. 2ARC*MOV15A and B, "Precooler Inlet Valves," will close after the alarm is received, and will cause a loss of condenser vacuum
- c. 2OFG*LV20A/B, Condenser 1A/B Level Controller closes immediately, followed by 2OFG*AOV103, "OFFGAS EXHAUST TO MAIN STACK" closing , and will not cause a loss of condenser vacuum
- d. The Charcoal Adsorbers are automatically placed into service after the alarm is received, and will not cause a loss of condenser vacuum.

CORRECT ANSWER: a

SOURCE: EB

271000 K3.01 Condenser vacuum 3.5
Offgas

REF:

N2-SOP-17

O2-OPS-001-271-2-01,R2,EO-4.0c,5.0,8.0

Question: 059 (1.0 Point)

Work in the area of the Above refuel Floor Reactor Building ventilation radiation monitors has resulted in the loss of signals from both the A and B radiation monitor channels. WHICH ONE (1) of the following actions should the crew verify ?

- a. Reactor Building ventilation has isolated.
- b. Reactor Building ventilation continues to operate normally.
- c. Only the inboard Reactor Building ventilation dampers have shut.
- d. Only the outboard Reactor Building ventilation dampers have shut.

CORRECT ANSWER: a *

SOURCE: EB

272000	K4.03	Fail safe tripping of process radiation monitoring logic during conditions of instrument failure	3.6
Rad Monitor			

REF:

O2-OPS-001-272-2-01,R2,EO-8.0

O2-OPS-001-288-2-03,R1,EO-5.0

Question: 060 (1.0 Point)

WHICH ONE (1) of the following water fire suppression systems is MANUALLY initiated ?

- a. Wet sprinkler system in the condensate booster pump area.
- b. Pre-action sprinkler system in the service water pump rooms.
- c. Water spray/deluge system for the station service transformer.
- d. Pre-action deluge system for the SBTG charcoal filter.

CORRECT ANSWER: d
SOURCE: MOD

286000 Fire A3.04 System Initiation
Protection
System

3.2

REF:
O2-OPS-001-286-2-01,R1,EO-4.0a
O2-OPS-001-261-2-01,R2,EO-7.0d

Question: 061 (1.0 Point)

WHICH ONE (1) of the following is a goal of the site ALARA program ?

- a. Not allow work in areas where personnel exposure is projected to be above 25 REM.
- b. Minimize personnel exposure and spread of contamination.
- c. Equalize dose received among all qualified members of the site staff.
- d. Track federal limits and approve exceeding those limits during emergencies.

CORRECT ANSWER: b

SOURCE:NEW

268000 K5.02 Radiation hazards and ALARA concept 3.1
Radwaste

REF:

GAP-ALA-01

S-RAP-ALA-0102

N2-OP-(ALL),SECTION 3

RP/GET TRAINING

Question: 062 (1.0 Point)

WHICH ONE (1) of the following is a Safety Limit violation?

- a. Steam dome pressure reaches 1310 psig for a hydrostatic test during cold shutdown.
- b. MCPR reaches 1.12 during a loss of feedwater heating transient from full power.
- c. Reactor mode switch is placed in STARTUP with steam dome pressure at 0 psig.
- d. RPV water level momentarily drops to -10 inches during Refueling .

CORRECT ANSWER: d

SOURCE: NEW

290002 K5.07 Safety limits
Reactor
Vessel
Internals

3.9

REF:
N2-TS 2.0
O2-OPS-001-101-2-01,R1,EO-11.0

Question: 063 (1.0 Point)

The reactor is operating at 100% power when the reactor engineer reports that the minimum critical power ratio (MCPR) safety limit has been exceeded.

Technical Specifications require WHICH ONE (1) of the following actions ?

- a. No operator action since reactor pressure is greater than 785 psig and core flow is greater than 10% of rated flow.
- b. Corrective action be initiated within 15 minutes and the MCPR restored to within the limit within two hours or reduce thermal power to less than 25% of rated within the next four hours.
- c. An immediate reactor scram by placing the Reactor Mode Switch in the SHUTDOWN position.
- d. The reactor to be in HOT SHUTDOWN within two hours and the NRC operations center notified as soon as possible and in all cases within one hour.

CORRECT ANSWER: d

SOURCE: NEW

290002	G5	Knowledge of limiting conditions for operations and safety limits	3.3
Reactor			
Vessel			
Internals			

REF:
N2-TS-2.0
O2-OPS-001-101-2-02,R3,EO-11.0

Question: 064 (1.0 Point)

Given the following:

- Refueling is in progress
- Mode switch in REFUEL
- Main Hoist loaded with a fuel bundle
- Refuel bridge is over the spent fuel pool

WHICH ONE (i) of the following conditions will generate a Reactor Manual Control system Rod Block?

- a. A control rod is selected from the Rod Select Matrix.
- b. The refuel bridge is moved over the core.
- c. The Mode Switch is placed in START JP.
- d. The Fuel Grapple control is placed in the RAISE position.

CORRECT ANSWER: b

SOURCE: MOD

234000 K1.04 Reactor manual control system: Plant-Specific 3.3
Fuel
Handling
Equipment

REF:
N2-OP39
Q2-OPS-001-234-2-01,R1,EO-4.0c,5.0

Question: 065 (1.0 Point)

When the main turbine trips at power an RPS trip and Recirculation pump downshift are initiated. WHICH ONE (1) of the following thermal limits (as expressed on core periodic report) is the limiting concern for this event?

- a. MFLPD
- b. MFLCPR
- c. FPAPDR
- d. MAPRAT

CORRECT ANSWER: b *
SOURCE: NEW

295005	G7	Ability to explain and apply all system limits and precautions	3.1
Main Turbine Generator Trip			

REF:

O2-OPS-001-202-2-01,R1,EO-8.0,11.0

O2-OPS-001-101-2-02,R3,EO-11.0

Question: 066 (1.0 Point)

The plant is operating at 100% power. A fault in the EHC logic causes a Main Turbine Generator Trip. WHICH ONE (1) of the following describes the immediate effect on reactor water level?

- a. Decreases rapidly because of the sudden increase in pressure collapsing voids.
- b. Increases rapidly because of the sudden decrease in steam flow while feedflow takes more time to respond.
- c. Decreases rapidly because the turbine bypass valves open rapidly increasing steam flow.
- d. Increases rapidly because the sudden increase in pressure in the core raises level in the downcomer, where level is actually measured.

CORRECT ANSWER: a

SOURCE: NEW

295005 AK1.03 Pressure effects on reactor water level
Main Turbine
Generator Trip

3.5

REF:

O2-OPS-001-248-2-00,R2,EO-8.0

O2-REQ-004-352-2-01,R1,EO-2.3

Question: 067 (1.0 Point)

WHICH ONE (1) of the following describes the design of the Setpoint Setdown Logic following a reactor scram when reactor water level has dropped below 159.3 ?

- a. Automatically lower the FWLC Master Level Controller setpoint to prevent a vessel overfeed.
- b. Automatically lower the FWLC Startup Level Controller setpoint to prevent a vessel overfeed.
- c. Remove the total steam flow signal so that feed flow will vary due to any deviation between actual and desired level only, to quickly restore level to the desired level.
- d. Remove the level signal from FWLC so that feed flow will match steam flow to prevent a vessel overfeed.

CORRECT ANSWER: a
SOURCE:MOD

295006 AA1.02 Reactor water level control system
SCRAM

3.9

REF:
O2-OPS-001-259-2-02,R2,EO-3.0,4.0c

Question: 068 (1.0 Point)

While operating at 60 % power, a generator load reject occurs causing reactor pressure to rise. The turbine pressure regulating system will take WHICH ONE (1) of the following actions to control reactor pressure?

- a. TCVs close, TBVs remain closed, CIV Intercepts close.
- b. TSVs remain open, TBVs open, TCVs close.
- c. TSVs close, TCVs remain open, CIV Intercepts close.
- d. TSVs close, TCVs close, TBVs open.

CORRECT ANSWER: b *

SOURCE: MOD

295007 High AK2.01 Reactor/turbine pressure regulating system
Reactor
Pressure

3.5

REF:

O2-OPS-001-248-2-00,R2,EO-4.0b/c,8.0

Question: 069 (1.0 Point)

The plant is shutdown in Condition 4 with the Recirculation pumps marked up. If a loss of Shutdown Cooling occurs, the operator is directed to raise RPV level to 227-243 inches. WHICH ONE (1) of the following describes the purpose of this step ?

- a. To flood over the MSIV's to the condenser.
- b. To increase natural circulation.
- c. Ensure that the core remains flooded.
- d. To provide NPSH for recirc. pump restart.

CORRECT ANSWER: b
SOURCE: EB

295009 Low AK1.05 Natural circulation
Reactor Water
Level

3.3

REF:
N2-SOP-31
O2-OPS-001-205-2-00,R1,EO-9.0

Question: 070 (1.0 Point)

Due to a LOCA, a high drywell pressure exists. WHICH ONE (1) of the following protects against loss of the pressure suppression function of the primary containment?

- a. Maintaining suppression pool level at the Primary Containment Water Level limit.
- b. Maintaining suppression pool level below 201 inches.
- c. Not exceeding the SRV Tailpipe Level limit.
- d. Not exceeding the Heat Capacity Level limit.

CORRECT ANSWER: d

SOURCE: MOD

295010 High EA2.03 Suppression Pool Level
Drywell
Pressure

3.8

REF:

N2-EOP-PCC,BASIS

O2-REQ-006-344-2-21,R0,EO-1.0,2.0

Question: 071 (1.0 Point)

The unit is operating at 100% power when the operator notices a decreasing feedwater temperature and increasing reactor power. In accordance N2-SOP-08, Unplanned Power Changes, WHICH ONE (1) of the following is an IMMEDIATE OPERATOR ACTION?

- a. Immediately scram the reactor.
- b. Reduce reactor power to <65%.
- c. Reduce reactor power to <90%.
- d. Manually isolate the affected heater string.

CORRECT ANSWER: c
SOURCE: MOD

295014 AK2.06 Moderator temperature
Inadvertent
Reactivity
Addition

3.4

REF:
N2-SOP-29
O2-OPS-001-260-2-00,R2,EO-8.0,9.0

Question: 072 (1.0 Point)

The reactor was operating at 100 percent power when a reactor scram resulted due to an inadvertent MSIV closure caused by testing. Only about one-third of the control rods fully inserted due to an undetected high water level in the Scram Discharge Volume. Reactor Power as indicated on the APRMs is 9 percent.

WHICH ONE (1) of the following actions, taken alone, prescribed by EOP-6, Att 14, would you expect to be most effective in inserting control rods?

- a. Manually initiate ARI by initiating the Redundant Reactivity Control system.
- b. De-energize scram solenoids by cycling the Power Source Selector Switch.
- c. Vent the Scram Air Header locally in the Reactor Building if accessible.
- d. Manually insert all control rods after defeating the RSCS and RWM interlocks

CORRECT ANSWER: d *
SOURCE: MOD

295015 AK2.01 CRD hydraulics
Incomplete
SCRAM

3.8

REF:
N2-EOP-06,ATT14
O2-OPS-006-344-2-01,R0,EO-2.0

Question: 073 (1.0 Point)

EOP-PC, Section PCP, states that the drywell shall be vented irrespective of off-site radioactive release when specified conditions have been met. WHICH ONE (1) of the following conditions would require drywell venting ?

- a. Suppression pool pressure reaches 9 psig.
- b. Drywell pressure cannot be maintained less than the Drywell Spray Initiation limit.
- c. Suppression Pool pressure cannot be maintained below 45 psig.
- d. Drywell pressure reaches the Maximum Primary Containment Water Level limit.

CORRECT ANSWER: c
SOURCE: MOD

295024 High EK1.01 Drywell integrity: Plant-Specific
Drywell
Pressure

4.1

REF:
N2-EOP-PCC,BASIS
O2-OPS-006-344-2-04,R0,EO-2.0

Question: 074 (1.0 Point)

A LOCA occurred due to a steam leak in the drywell. The "B" loop of RHR was placed in drywell spray and the "A" loop was placed in suppression chamber spray. Subsequently, the high drywell pressure signal clears. WHICH ONE (1) of the following describes the expected system status, with NO operator action?

- a. Drywell spray isolates; suppression chamber spray continues.
- b. Drywell spray continues; suppression chamber spray isolates.
- c. Drywell and suppression chamber sprays isolate.
- d. Drywell and suppression chamber sprays continue.

CORRECT ANSWER: b

SOURCE: MOD

295024 High EA2.09 Suppression chamber pressure: Plant-Specific 3.9
Drywell
Pressure

REF:

N2-EOP-PCC,BASIS

G2-OPS-001-205-2-00,R1,EO-4.0c,9.0

Question: 075 (1.0 Point)

WHICH ONE (1) of the following setpoints is designed to initiate protective functions to protect the integrity of the fuel clad and reactor coolant pressure boundary?

- a. 1325 psig
- b. 1165psig
- c. 1052 psig
- d. 1035 psig

CORRECT ANSWER: c

SOURCE: NEW

295025 EA2.01 Reactor Pressure
High Reactor
Pressure

4.3

REF:

N2-TS-2.0,RPS SETPOINTS

O2-OPS-001-101-2-01,R1,EO-11.0

Question: 076 (1.0 Point)

"Alternate Level Control", has been entered. RPV level has dropped to below TAF. The procedure requires emergency depressurization. WHICH ONE (1) of the following is the reason for emergency depressurizing?

- a. To maximize injection to regain submergence core cooling.
- b. To increase steam flow to remove all decay heat to cool the core.
- c. To ensure depressurization is completed while still within design limits.
- d. To allow establishing of the Minimum Alternate Flooding Pressure to cool the core.

CORRECT ANSWER: a
SOURCE: MOD

295031 Reactor EA2.04 Adequate Core Cooling
Low Water
Level

4.6

REF:
N2-EOP-C1,BASIS
O2-OPS-006-344-2-13,R0,EO-3.0

Question: 077 (1.0 Point)

While combating an ATWS, certain plant conditions require that injection to the RPV be terminated and RPV level lowered.

WHICH ONE (1) of the following most accurately describes the reason for this step ?

- a. Lowering RPV level will result in further concentration of boron and lower reactor power level.
- b. Lowering RPV level will reduce natural circulation driving head and core flow, reducing reactor power level.
- c. Lowering RPV level will allow reactor water to heat up, adding negative reactivity due to Moderator coefficient, reducing reactor power level.
- d. Lowering RPV level below the TAF will remove the moderator thereby reducing reactor power level.

CORRECT ANSWER: b

SOURCE: MOD

295037 EK2.09 Reactor water level.
ATWAS

4.0

REF:
N2-EOP-C5,BASIS
O2-OPS-006-344-2-17,R0,EO-3.0

Question: 078 (1.0 Point)

The plant is operating at 80% thermal power, 100% rod line when "A" Reactor Recirc Pump trips. Reactor power stabilizes at 59% and core flow at 41%.

The ASSS directed the RO to drive rods to reduce power. After 10 mins of driving rods the following plant conditions exist:

Core Flow = 38.5 % Thermal Power = 55%

WHICH ONE (1) of the following identifies the next appropriate action ?

- a. Continue driving rods
- b. Post the Heightened Awareness sign
- c. Restart the idle Recirc Pump
- d. Manually scram the Reactor

CORRECT ANSWER: d *

SOURCE: MOD

295001 AK1.02 Power/flow distribution

3.3

Partial or
Complete
Loss of
Forced
Core Flow
Circulation

REF:

N2-SOP-29

O2-OPS-001-202-2-01,R1,EO-9.0

O2-OPS-001-202-2-02,R1,EO-9.0

Question: 079 (1.0 Point)

WHICH ONE (1) of the following actions is required to operate in single recirculation loop operation ?

- a. Reduce APRM flow bias scram setpoints; reduce the MCPR Safety Limit by 0.01; reduce MAPLHGR and reduce MCPR operating limits per the core operating limits report.
- b. Reduce APRM flow bias scram setpoints; increase the MCPR Safety Limit by 0.01; increase MAPLHGR and increase MCPR operating limits per the core operating limits report.
- c. Increase APRM flow bias scram setpoints; increase the MCPR Safety Limit by 0.01; reduce MAPLHGR and increase MCPR operating limits per the core operating limits report.
- d. Reduce APRM flow bias scram setpoints; increase the MCPR Safety Limit by 0.01; reduce MAPLHGR and increase MCPR operating limits per the core operating limits report.

CORRECT ANSWER: d *

SOURCE: NEW

295001	AA1.01	Recirculation System	3.5
Partial or Complete Loss of Forced Core Flow Circulation			

REF:

N2-TS-3/4.4

N2-SOP-29

O2-OPS-001-202-2-01,R1,EO-9.0,11.0

Question: 080 (1.0 Point)

The Unit was on line at 100% power when condenser vacuum began to decay. Presently, condenser vacuum is 7.5 inches Hg. Operator actions have been taken. WHICH ONE (1) of the following describes the current status of the plant ?

- a. Main turbine is tripped, MSIVs are closed, BPVs are controlling reactor pressure.
- b. Main turbine is tripped, MSIVs are open, BPVs are controlling reactor pressure.
- c. Main turbine is on line, MSIVs are open, TCVs are controlling reactor pressure.
- d. Main turbine is tripped, MSIVs are closed, SRVs are controlling pressure.

CORRECT ANSWER: d *

SOURCE: NEW

295002	G7	Ability to explain and apply system limits and precautions	3.2
Loss of Main Condenser Vacuum			

REF:

N2-SOP-09

O2-OPS-001-223-2-02,R1,EO-4.0c,5.0

O2-OPS-001-212-2-00,R1,EO-4.0c,5.0

Question: 081 (1.0 Point)

Throughout the plant, panels associated with the Station Black Out procedure are outlined with WHICH ONE (1) of the following identifiers ?

- a. 2" wide glow in the dark tape
- b. Luminous green arrows
- c. Heavy Black lines
- d. Black and Yellow tape

CORRECT ANSWER: a

SOURCE: NEW

295003	AK1.06	Station blackout: Plant-Specific	3.8
Partial or Complete Loss of A.C. Power			

REF:

N2-SOP-02

O2-OPS-001-262-2-01,R2,EO-9.0

Question: 082 (1.0 Point)

The plant is at 62% power, recovering from an inadvertent trip of the "B" reactor recirc pump. Shortly after the recirc pump was started and power ascension commenced the high reactor water level alarm is received. The CSO notes that actual level is 187.5" and rising. WHICH ONE (1) of the following actions should the crew take immediately:

- a. Prepare for a reactor scram on high level and shut the MSIVs so no water will enter the turbine.
- b. Place the reactor vessel water level control system in manual and attempt to return water level to normal.
- c. Trip one RFP and open turbine bypass valves to help lower water level.
- d. Manually scram the reactor and shut the MSIVs.

CORRECT ANSWER: b *

SOURCE: New

295008 AK2.03 Reactor water level control 3.6
High
Reactor
Water
Level

REF:

N2-SOP-06

O2-OPS-001-259-2-02,R2,EO-9.0

Question: 083 (1.0 Point)

The Drywell Temperature Control section of EOP-PCC, Primary Containment Control, has the operator initiate drywell sprays prior to reaching a drywell temperature value of 340 degrees F.

However, drywell sprays are initiated only if the drywell temperature and pressure are below the Drywell Spray Initiation Limit Curve.

WHICH ONE (1) of the following is the basis for this limitation?

- a. Initiation of drywell sprays above the Drywell Spray Initiation Limit curve could result in failure of the primary containment due to exceeding the negative design pressure.
- b. Initiation of drywell sprays above the Drywell Spray Initiation Limit curve could result in failure of the RPV due to excessive thermal stresses caused by the cold water spray.
- c. Initiation of drywell sprays above the Drywell Spray Initiation Limit curve could result in failure of the drywell spray piping due to excessive temperature gradients.
- d. Initiation of drywell sprays above the Drywell Spray Initiation Limit curve would not result in the desired reduction in drywell temperature and no benefit would be derived from initiating the system.

CORRECT ANSWER: a
SOURCE:MOD

295012 AK1.01 Pressure/temperature relationship
High
Drywell
Temperature

3.3

REF:
N2-EOP-PCC,BASIS
02-REQ-006-344-2-21,R0,EO-2.0

Question: 084 (1.0 Point)

Suppression Pool Water Temperature post accident monitoring instrumentation is provided by WHICH ONE (1) of the following ?

- a. 2 RTD's per quadrant at elevation 197'
- b. 2 RTD's per sector at elevation 197'
- c. 2 RTD's per quadrant at elevation 199'
- d. 2 RTD's per sector at elevation 199'

CORRECT ANSWER: a
SOURCE: EB

295013 EA1.01 Suppression Pool Cooling
High
Suppression
Pool
Temperature

4.1

REF:

O2-OPS-001-223-2-06,R2,EO-3.0
N2-TS 3.3.7.5,

Question: 085 (1.0 Point)

Following a control room evacuation, WHICH ONE (1) of the following is the desired mode of RPV water level and reactor pressure control ?

- a. Feedwater pumps controlling RPV water level and turbine bypass valves controlling reactor pressure.
- b. RCIC controlling RPV water level and HPCS controlling reactor pressure.
- c. RCIC controlling RPV water level and SRVs controlling reactor pressure.
- d. HPCS controlling RPV water level and SRVs controlling reactor pressure.

CORRECT ANSWER: c
SOURCE:MOD

295016 G6
Control Room
Abandonment

Ability to locate and operate components, including
level controls

4.1

REF:
N2-SOP-78
O2-OPS-001-296-2-00,R0,EO-9.0

Question: 086 (1.0 Point)

NMP2-EOP-RADIOACTIVE RELEASE CONTROL, has been entered.

WHICH ONE (1) of the following is the reason that the operator is directed to ensure that the Turbine Building Ventilation fans are running?

- a. To reduce radioactive releases to the environment.
- b. To prevent radioactive releases to the environment.
- c. To provide an elevated, monitored release pathway.
- d. To provide a processed release pathway.

CORRECT ANSWER: c

SOURCE: NEW

295017 AK2.04 Plant ventilation systems

3.1

High
Off-Site
Release
Rate

REF:

N2-EOP-SCC,BASIS

O2-OPS-006-344-2-12.R0,EO-2.0

Question: 087 (1.0 Point)

Following a loss of the CCP Cooling system WHICH ONE (1) of the following loads could be aligned to receive cooling from an alternate source?

- a. RHS Heat Exchangers
- b. IAS Air Compressors
- c. SFC Heat Exchangers
- d. WCS Regenerative Heat Exchangers

CORRECT ANSWER: c

SOURCE: EB

295018 AA1.02 System loads
Partial or Complete
Loss of Component
Cooling Water

3.3

REF:
N2-OP-13
O2-OPS-001-208-2-00,R1,EO-4.0a,5.0,7.0

Question: 088 (1.0 Point)

WHICH ONE (1) of the following describes the expected Feedwater system response to an initiation of the Redundant Reactivity Control system (RRCS) on high RPV pressure during an ATWS ?

- a. All Feedwater pumps trip and can be restarted 25 sec. Later.
- b. All level control valves shift to manual and close and can be reopened 25 sec. later.
- c. The LV-10's shift to manual and can be placed back in auto 98 sec. Later.
- d. The minimum flow control valves fail open and can be reclosed by resetting RRCS.

CORRECT ANSWER: b

SOURCE: NEW

259001 G4 Knowledge of system purpose and/or function
Feedwater

REF:

N2-OP-03

O2-OPS-001-294-2-08,R1,EO-4.0c,5.0

Question: 089 (1.0 Point)

WHICH ONE (1) of the following identifies the expected component response in the Containment Purge system due to a spurious Division I Group 8 Isolation during containment inerting ?

- a. Containment Purge System inboard isolation AOVs would fail open, but the lines could be isolated by the outboard isolation valves.
- b. Containment Purge System inboard isolation AOV's would fail closed, but could be reopened using the Keylock LOCA overrides.
- c. Containment Purge System outboard isolations AOV's would fail closed, and could not be remotely operated.
- d. Containment Purge System outboard AOV's would fail as-is, but could be opened locally.

CORRECT ANSWER: c *

SOURCE: EB

295019 AK2.14 Plant air systems
Partial or
Complete
Loss of
Instrument
Air

3.2

REF:
N2-OP-83
N2-SOP-19
O2-OPS-001-223-2-03,R2,EO-5.0,9.0

Question: 090 (1.0 Point)

The plant is in mode 1. In accordance with N2-SOP-30, *CONTROL ROD DRIVE FAILURES*, WHICH ONE (1) of the following conditions requires the operator to manually scram the reactor?

- a. Reactor pressure is 860 psig and more than one accumulator alarm is present.
- b. Reactor pressure is 860 psig and charging water header pressure can not be restored.
- c. Reactor pressure is 900 psig and more than one accumulator is inoperable.
- d. Reactor pressure is 900 psig and charging water header pressure can not be restored within 15 minutes.

CORRECT ANSWER: c
SOURCE:NEW

295022 AK2.07 Reactor pressure (SCRAM assist): Plant-Specific 3.4
Loss of
CRD
Pumps

REF:
N2-SOP-30
O2-OPS-001-201-2-01,R3,EO-8.0,9.0

Question: 091 (1.0 Point)

When RPV pressure and suppression pool temperature cannot be maintained below the Heat Capacity Temperature limit, emergency RPV depressurization is REQUIRED. WHICH ONE (1) of the following describes the result of failing to emergency depressurize?

- a. lead to a loss of equipment necessary for safe shutdown
- b. lead to boiling in the suppression pool and a radioactivity release
- c. lead to the loss of the ability to open SRV's.
- d. lead to exceeding the capability of the SRV tail pipe

CORRECT ANSWER: a
SOURCE: NTV

295026 EK3.01 Emergency/normal depressurization
Suppression
Pool High
Water
Temperature

3.8

REF:
N2-EOP-PCC,Basis Document
O2-OPS-006-344-2-04,R0,EO-2.0

Question: 092 (1.0 Point)

During an emergency, the drywell developed high temperatures before the RPV was emergency depressurized. EOP-RPV, RPV Flooding, has been entered because level indication has been lost. It states that injection into the RPV should commence to maintain RPV pressure at least 49 psig above suppression chamber pressure. WHICH ONE (1) of the following is the basis for maintaining the 49 psig pressure margin between the reactor and the suppression chamber?

- a. Assures that the fuel clad temperature is below 2200 degrees F
- b. Assures that all decay heat will be removed from the reactor
- c. Assures that the required number of SRVs will remain open
- d. Assures that water will not be siphoned into the SRV tailpipes

CORRECT ANSWER: b
SOURCE: MOD

295028 EK2.03 Reactor water level indication
High
Drywell
Temperature

3.6

REF:
N2-EOP-C4,BASIS
O2-OPS-006-344-2-16,R0,EO-2.0

Question: 093 (1.0 Point)

EOP-PCC, "Primary Containment Control", directs the operator to spray the drywell only if suppression pool level is below 217 feet. WHICH ONE (1) of the following correctly describes the bases for this limit at this step ?

- a. Ensures the hydrodynamic loading capability of the SRV tailpipe and T- quencher will not be exceeded.
- b. Ensures that the suppression chamber-to-drywell vacuum breakers are not submerged.
- c. Ensures that suppression chamber sprays are still effective.
- d. Ensures the capability of the primary containment vent is no longer effective.

CORRECT ANSWER: b
SOURCE:MOD

295029 EA2.01 Suppression Pool Water Level
High
Suppression
Pool Water
Level

3.9

REF:
N2-EOP-PCC,BASIS
O2-OPS-006-344-2-04,R0,EO-2.0

Question: 094 (1.0 Point)

EOP-PCC, "Primary Containment Control" (suppression pool water level below EL 199.5 ft leg), requires a reactor scram if suppression pool level cannot be maintained above 192 feet. WHICH ONE (1) of the following is a correct statement regarding this level ?

- a. This level is the elevation of the drywell-to-suppression chamber downcomers
- b. This level is the elevation of the SRV T-quenchers.
- c. This level is the elevation of the RCIC turbine exhaust discharge line.
- d. This level is the elevation of the lowest level indicator in the pool.

CORRECT ANSWER: d
SOURCE: MOD

295030 EK2.08 SRV discharge submergence
Low
Suppression
Pool Water
Level

3.5

REF:
N2-EOP-PCC,BASIS
O2-REQ-006-344-2-21,R0,EO-2.0

Question: 095 (1.0 Point)

The plant was at rated power when a steam line break occurred in the steam tunnel. As a result, the following occurred:

- RCIC was initiated manually to restore reactor water level to the normal band.
- HPCS was also manually started but tripped on overcurrent.
- RB Ventilation (HVR) exhaust radiation level is 1×10^{-2} uCi/ml.

For the conditions described above, WHICH ONE (1) of the following statements correctly describes control of Reactor Building atmospheric conditions?

- a. HVR would be controlling Reactor Building differential pressure.
- b. Both HVR and SBTG would be controlling Reactor Building differential pressure.
- c. Neither HVR or SBTG would be controlling Reactor Building differential pressure.
- d. SBTG would be controlling Reactor Building differential pressure.

CORRECT ANSWER: d
SOURCE:MOD

295033 High Secondary
Containment Area
Radiation Levels

EA1.04

SBTG/FRVS: Plant Specific

4.1

REF:
N2-OP-52
O2-OPS-001-288-2-03,R1,EO-4.0c,5.0

Question: 096 (1.0 Point)

Emergency Recirc Unit 2HVR*UC413B has been marked up with its' power supply breaker open. If HVR exhaust radiation level exceeds an isolation setpoint, WHICH ONE (1) of the following describes how the Emergency Recirc Units will respond?

- a. HVR*UC413A will start immediately.
- b. HVR*UC413A will start after a 5 second time delay.
- c. HVR*UC413A will start after a 25 second time delay.
- d. HVR*UC413A will not start.

CORRECT ANSWER: c
SOURCE: EB

295034 EK2.01 Process radiation monitoring system
Secondary
Containment
Ventilation
High
Radiation

3.9

REF:
O2-OPS-001-288-2-03 ,R1,EO-4.0c,8.0

Question: 097 (1.0 Point)

Plant conditions are as follows:

- The reactor has been in COLD SHUTDOWN for two (2) days following power operation.
- Reactor vessel water level is 180 inches.
- Neither reactor recirculation pump is available.
- Shutdown cooling has isolated and the shutdown cooling suction valves cannot be opened.

WHICH ONE (1) of the following operator actions will prevent reactor vessel stratification AND provide decay heat removal?

- a. Place Reactor Water Cleanup System in service and raise RPV level to 227-243 inches.
- b. Insert a manual scram to maximize CRD flow to the bottom head region and begin rejecting with Reactor Water Cleanup.
- c. Start a second CRD pump and maximize CRD cooling water differential Pressure (d/p) and raise RPV water level to 227-243 inches.
- d. Place Reactor Water Cleanup System in service and raise reactor vessel water level until the HIGH REACTOR LEVEL HI/LOW annunciator (603139) is received.

CORRECT ANSWER: a
SOURCE: MOD

295021 AK1.02 Thermal stratification
Loss of
Shutdown
Cooling

3.3

REF:
N2-SOP-31
O2-OPS-002-205-2-00,R1,EO-8.0,9.0

Question: 098 (1.0 Point)

EOP-SCC, "Secondary Containment Control", requires a rapid depressurization of the RPV if the Maximum Safe Operating Temperature is exceeded for more than one area. WHICH ONE (1) of the following is the BASES for this depressurization ?

- a. Based on preventing fuel damage to prevent release of fission products into the reactor building.
- b. Based on the potential for causing equipment failures that are used during a failure to scram.
- c. Based on protecting personnel and equipment from high temperature environments.
- d. Based on the potential for fire damage to equipment, instrumentation and controls.

CORRECT ANSWER: c

SOURCE: MOD

295032 High EA2.01 Area Temperature
Secondary
Containment
Area
Temperature

3.8

REF:
N2-EOP-SCC,BASIS
O2-OPS-006-344-2-08,R0,EO-2.0

Question: 099 (1.0 Point)

During refueling, a fuel assembly is dropped and several Refueling Floor area radiation alarms annunciate. According to SOP-39, Refuel Floor Events, WHICH ONE (1) of the following correctly describes the Immediate action(s) that should be taken ?

- a. Notify SSS and Radiation Protection of the event and determine if core alterations should be terminated.
- b. Enter EOP-Radioactive Release, when conditions are stable, assess damage and plan recovery actions.
- c. Notify the SRO/LSRO of the event and announce a station evacuation.
- d. Notify refuel floor SRO/LSRO of the event and evacuate personnel from the refuel floor and drywell areas.

CORRECT ANSWER: d
SOURCE: MOD

295023 AK1.01 Radiation exposure hazards
Refueling
Accidents

3.6

REF:
N2-SOP-39
O2-OPS-001-234-2-01,R1,EO-8.0,9.0

Question: 100 (1.0 Point)

Following a plant shutdown to mode 4, shutdown cooling is placed in service. There are procedures in place to establish alternate heat removal flow paths should shutdown cooling become unavailable. WHICH ONE (1) of the following is the reason for implementing these procedures should shutdown cooling become unavailable?

- a. because there are no incore temperature detectors.
- b. to prevent an inadvertent mode change.
- c. to prevent fuel cladding failure due to plastic strain.
- d. to protect the incore neutron detectors

CORRECT ANSWER: b

SOURCE: NEW

295021	AK3.05	Establishing alternate heat removal flow paths	3.6
Loss of Shutdown Cooling			

REF:

N2-SOP-31

O2-OPS-001-205-2-00,R1,EO-8.0,9.0

July 16, 1997

NOTE TO: NRC Document Control Desk
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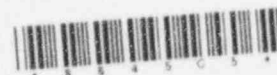
FROM: Virgil Curley
Licensing Assistant
Operator Licensing Branch, Region I

SUBJECT: Operator Licensing Written Retake Examination
administered on June 6, 1997. At Nine Mile Point
Unit 2. Docket No. 50-410

On June 6, 1997, an Operator Licensing Written Retake Examination was administered at the referenced facility. Attach you will find the following information for processing through NUDOCs and distribution to the NRC staff, including the NRC PDR:

- Item #1 - Facility submitted outline and retake exam material designated for distribution under RIDS Code A070.
- Item #2 - Examination Report with the as given written examination attached, designated for distribution under RIDS Code IE42

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