U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/OL-92-01

Docket No. 50-461 License No. NPF-62

Licensee: Illinois Power Company
Post Office Box 678
Clinton, IL 61727

Facility Name: Clinton Power Station

Examination Administered At: Clinton Power Station
Clinton, Illinois

Examination Conducted: Weeks of January 20 and 27, 1992

RIII Examiners: H. Peterson 3/24/92
H. Peterson Date

M. Parrish, Idaho National Engineering Laboratory (INEL)

C. Tyner, INEL (prepared written exam only)

Chief Examiner: Michael E. Bielby, Sr. 3/24/92
M. Bielby, Sr. Date

Approved By: for MJJordan 3/25/92
M. Jordan, Chief Date
Operator Licensing Section 1
Division of Reactor Safety


Examination Summary

Examination Administered During the Weeks of January 20 and 27, 1992 (Report No. 50-461/OL-92-01)

A total of fourteen initial written and operating license examinations were administered to seven Reactor Operators (ROs), three Senior Reactor Operator-Upgrades (SRO-Us) and four Senior Reactor Operator-Instants (SRO-Is). Examinations were administered in accordance with guidelines of NUREG 1021, Operator Licensing Examiner Standards, Revision 6.

Dynamic simulator scenarios were also administered to two SROs as a result of an unsatisfactory evaluation in that area during the June 1991 requalification evaluation.
Results: Twelve individuals successfully passed their respective initial license examinations. Two ROs received unsatisfactory grades on the written examination. The two requalification retake SROs successfully passed their dynamic simulator scenario evaluations.

The following is a summary of major strengths and weaknesses noted during examination administration:

STRENGTHS

- SRO command and control authority (details in Section 3).
- Markup of EOP flowcharts by the SROs (details in Section 3).
- Candidates' communications in the simulator (details in Section 3).
- Upgrading simulator instructor's booth (details in Section 4).
- Documentation of requalification retake results (details in Section 4).

WEAKNESSES

- Candidate system knowledge (details in Section 3).
- Exam reference materials supplied to the NRC and contractors (details in Sections 4 and 5).
- Training Staff preexam review (details in Section 4).

## REPORT DETAILS

1. Examiners

+M. Bielby, Chief Examiner, RIII NRC
H. Peterson, Examiner, RIII NRC
M. Parrish, Examiner, INEL

2. Persons Contacted

Facility Representatives

+J. Cook, Manager - Clinton Power Station
+R. Morgenstern, Manager - Nuclear Training Department
+F. Spangenberg, Manager - Licensing and Safety
+D. Antonelli, Director - Operations Training
+K. Graf, Director - Quality Assurance
+D. Korneman, Director - Systems and Reliability Engineering
+R. Phares, Director - Licensing
+P. Yokum, Director - Plant Operations
+J. Owens, Supervisor - Requalification Training
+J. O'Brien, Supervisor - ISEG
+F. Worrell, Supervisor - Initial License Training
+G. Halverson, Project Engineer - ISEG

NRC Representatives

+P. Brochman, Senior Resident Inspector
+M. Jordan, Section Chief - RIII, BWR Operator Licensing

+Present at the Management Exit Meeting on January 31, 1992.

3. OPERATING/WRITTEN EXAMINATION

The following is a summary of generic strengths and weaknesses noted on the operating and written portions of the licensing examination. This information is being provided to aid the licensee in evaluating the initial license training program.

Strengths

- Overall, the SROs exhibited good command and control authority, especially when directing the EOPs. SROs were observed to be very aware of remaining in their position of authority, directing operator actions, giving periodic briefs and maintaining an overall accountability of the plant status.

- The SROs conscientiously marked EOP flowcharts as they completed associated steps. Plant parameters were periodically elicited, updated and logged alongside appropriate EOP entry conditions in an orderly manner.

- During dynamic scenarios, candidates used effective two-way communications, including repeat-backs. Orders and information were issued clearly and concisely. Acknowledgement of the repeat-back by the person issuing the order did not always occur.

- Overall, candidates were well prepared for the examination. Knowledge of system and administrative procedures, and radiological controls was good. During the simulator and JPM portion of the operating examination, candidates clearly indicated meters, indicating lights, alarms and recorders from which they were obtaining information. In addition they "thought out loud" which aided the examiners in clearly evaluating candidate's decisions and actions.

Weaknesses

- Nine candidates missed RO/SRO exam question 15/19. The question asked how the 250 psid pressure differential (d/P) between CRDH drive water header and reactor pressure was maintained during a reactor startup as reactor pressure increases. A majority of the candidates identified manual/automatic operation of the CRDH Pressure Control Valve (PCV) as being responsible for maintaining the differential pressure (d/P). The correct answer is the CRDH Flow Control Valve (FCV) automatically opens to maintain a constant flow, and therefore a constant d/P.

- Ten candidates missed RO/SRO exam question 33/38. The question asked why the operator is cautioned not to exceed 110 psig first stage pressure during main turbine shell warming. All ten candidates identified that first stage pressure above this limit places the plant close to the Turbine trip scram. The correct answer is that first stage pressure above this limit may reach the low power setpoint disabling the Rod Pattern Controller and violating Technical Specifications.

- Nire candidates missed RO/SRO exam question 40/45. The question stated the reactor was in cold shutdown with RHR Loop "A" inoperable, RHR Loop "B" in Shutdown Cooling. A break occurs resulting in water level decreasing to -150" which causes a LPCI initiation signal. The question asked for the required operator actions to place RHR Loop "A" in the LPCI injection mode. A majority of the candidates correctly identified that the RHR pump suction had to be manually realigned, but failed to realize the pump had to be manually restarted.

4. TRAINING

Strengths

- The facility is upgrading the simulator instructor's console. The console will be removed from the operator's direct line of sight and installed on the East side of the operator horseshoe area. A soundproof glass front will be installed on the console to create a booth and isolate instructor/operator conversations during administration of scenarios. Additionally the booth will be elevated to aid the instructor's observation of operator movement within the horseshoe and backpanel areas.

- Documentation of the facility's requalification retake evaluations was very thorough, concise and legible. The results were contained in a 3-ring binder, labeled and indexed.

Weaknesses

- The exam reference material delivered to both the NRC and contract examiner was poorly indexed and labeled, incomplete and lacking in overall quality assurance. Both the cover letter and Enclosure 1 to the initial 90 day notification letter clearly state that failure to provide complete, properly bound and indexed plant reference material may result in the return of the material to the person who is the highest level of corporate management responsible for plant operations and cancellation of the exam. A list of appropriate reference materials is also attached to the letter.

The plant specific procedures were in 3-ring binders labeled "CPS PLANT STAFF PROCEDURES BOOK 1 (through 18)". The outside label contained no indication of the individual binder contents. Some of the binders had individual procedures indexed, others did not. None of the index tabs were labeled with the procedure number. It was initially difficult to determine which procedures were Administrative, Off-Normal, Alarm Response, Normal Operating, Emergency Operating or Surveillance.

The plant training lesson plans were contained in 3-ring binders labeled "LESSON PLANS BOOK 1 (through 20)". The outside label contained no indication of the individual binder contents. Each of the individual lesson plans were indexed, and the index tabs labeled with the lesson number, however, they were not in numerical sequence. A separate index listing the lesson plans was provided, but there was no indication in which binder the individual lesson plan could be located. The examiners eventually deduced that the lesson plans were arranged alphabetically.

The plant system descriptions were contained in 3-ring binders labeled "SYSTEM DESCRIPTIONS ... " and included a listing of contents by system acronym on each binder label. However, there was no listing of system acronyms included.

Lesson Plans LP 85423 and 85632 were duplicated in the same binder (#14). Lesson Plan Book 11 was all duplicate lesson plans (LP 87380, 87509, 87506, 85409, 87409, 85572, 86572, 85452, 86452, 85404, 86404, 87404, 87525 and 85432). One book of System Descriptions was a total duplicate containing the following systems: TE/TF, TG-G, TG-T, TO, TP, TW, VA, VC, VD and VF.

Lesson Plans (LP 85453, 86453 and 85417) were listed in the index, but not included in any of the binders. The NRC contractor received no document listing procedures, lesson plans, system descriptions, drawings or flowcharts enclosed in the boxes. The CPS Plant Staff Master Index by Class (POMI) is not sufficient for this purpose. None of the following procedures were originally sent: 1) Radiation Protection procedures covering exposure limits, contamination control, ALARA; 2) CPS 4407.01 (EOP-3, -4 and -5); 3) EOP lesson plans and bases; 4) CPS 1005.05, Standing Orders and Night Orders; 5) Control of Operator Aids; 6) CPS 1001.10, Control of Working Hours; 7) CPS 1001.06, Fire Brigade; 8) Maintenance Work Request; 9) Fire Protection; 10) Conduct of Refueling; 11) Operability Check Surveillances.

- Two facility employees, one each from training and operations, were allowed to review the written exam in the NRC Regional Office the week of January 6, 1992. A third facility training representative arrived the second day to discuss preexam comments with the NRC. A majority of the preexam comments were incorporated into the exam.

  The facility preexam review was not totally satisfactory as evidenced by the number of postexam comments resulting in changes to the written exam. Fourteen postexam comments were received from the facility, thirteen of which were incorporated into final grading of the written exam. Postexam comments resulted in the following exam changes: six RO and five SRO questions were deleted; three RO and five SRO questions had more than one correct answer; two RO and two SRO questions had changes in correct answers.

  Nine of the postexam comments had no preexam comment. Of the remaining five postexam comments:
  1) Two of the facility's preexam comments were inadvertently not incorporated into the final exam copy, consequently, the postexam comment was identical to the preexam; 2) One of the postexam comments was not accepted; 3) One preexam comment to change a distractor was incorporated, but the postexam comment stated there were no correct answers; and 4) one preexam comment to change the question stem was incorporated, but the postexam comment stated there were two correct answers.

  Additional facility justification for acceptance of postexam comments included inconsistent procedures (Section 5); incorrect Lesson Plan system information (Section 5); and additional reference material (EOP

Bases) which had not been provided to the examiners. Enclosure 3 contains the facility comments and NRC resolutions to those comments.

5. <u>TRAINING MATERIAL/PROCEDURES DISCREPANCIES</u>

- Facility procedure CPS 3302.01, Rev. 11, Reactor Recirculation, pages 5 and 19 of 35; and CPS 3312.01, Rev. 17, Residual Heat Removal pages 7 and 74 of 81 are inconsistent when referring to the minimum Shutdown Range water level for natural circulation with Reactor Recirculation secured. This problem was discussed with the Senior Resident and at the Facility Exit Meeting.

- Lesson Plan LP 85205, Residual Heat Removal/Basics, Rev. 0, page 23 of 52, Section C.1.a, incorrectly states "Regardless of signal origin (automatic or manual) the response of the RHR System is similar. A LPCI initiation signal will supersede and terminate all other modes of RHR Systems operation in effect at the time the signal is received."

  If RHR is aligned to the Shutdown Cooling Mode and a LPCI initiation signal is received, the RHR pump suction must be manually realigned from the Recirculation loop to the Suppression Pool, and the pump has to be restarted by taking the control switch to the STOP then START positions. Although there are no specific procedures to direct operator actions for this event, a review of associated electrical drawings support these required actions.

- Lesson Plan LP 87552, RPV Control (EOP-1), Rev. 0, page 29 incorrectly states:

  " . . . when below RPV Saturation Temperature <u>and</u> above Minimum Useable Level:

  a. Assures indicated trend is valid.

  .
  .
  .

  c. Does <u>not</u> assure accuracy . . ."

  The Lesson Plan contradicts Detail A, RPV Water Level Instruments, on Rev. 20 of the EOP flowcharts, the indicated level would be accurate and valid for trending.

  According to Detail A, RPV WATER LEVEL INSTRUMENTS, on Rev. 20 of the EOP flowcharts, the indicated level would be accurate and valid for trending.

- Learning Objective 1.1 on page 1 of Lesson Plan 87212, "Reactor Protection/Reactor Operator", states "Given any operation or manipulation of the RS, state any precautions listed in the RPS operating procedure that would be applicable to that operation or manipulation". Understanding and awareness of major precautions are appropriate, however, expecting an operator to memorize all precautions may not be practical. Although stated as an objective, the postexam comments were contradictory to the training expectations. (Reference: Enclosure 3, Facility Comments and NRC Resolutions; Question: RO No. 30/SRO No. 35).

- Learning Objective, 1.8.10, is listed on page 2-A of the Instructor's Handbook section in Lesson Plan, LP 85271, Rev. 1, Off Gas/Basic. It is stated as "dilution of hydrogen gas concentration". On page 8-A of the same section, the objective indicates the following information is part of the stated objective: "Carry the noncondensibles through the system. Dilute hydrogen to below 4%. Provide superheated steam to the recombiner." On pages 8-B and 9-B of the Student Handbook section of the Lesson Plan, the 1.8.10 objectives that were listed on page 8-A are covered, but also include ". . . Provide superheated steam to the recombiner to enhance the recombination efficiency and act as a coolant to keep the recombiner below the design temperatures while at full reactor power." which contains answer a. of the examination question (RO/SRO 38/43). The purposes are not stated as "primary and secondary".

  The learning objective was clearly stated on page 2-A, but appears to be inconsistent with the information on page 8-A, and the author's reference, 8-B and 9-B. The facility is encouraged to review the stated objective, verify consistency of the material, and make a determination of whether it clearly reflects expectations of their operators. (Reference: Enclosure 3, Facility Comments and NRC Resolutions; Questions: RO No. 38/SRO No. 43)

6. GENERAL OBSERVATIONS

The following observations were made by the examiners while administering examinations:

- Security and Health Physics personnel were courteous and cooperative in assuring minimum delays when accessing the plant.

- Operations personnel were very cooperative and allowed examinations to continue in the Control Room without interruption.

- Training Staff was very cooperative in providing a locked room with phone, hard hats and eye protection, and assisting with transportation to and from the plant.

7. <u>Exit Meeting</u>

A pre-exit meeting with the Training Department, and a management exit meeting was conducted on January 31, 1992. Those attending the management meeting are listed in Section 2 of this report.

The following items were discussed during the exit meetings:

a. Operator and Training Department strengths and weaknesses noted during examination administration (Sections 3, 4 and 5).

b. The general observations made by the examiners during examination administration (Section 6).

The results of the examinations were not presented at the exit meeting. The licensee was informed that the results would be contained in the examination report which would be issued within approximately 30 - 45 working days.

ENCLOSURE 2

## SIMULATION FACILITY REPORT

Facility Licensee: Illinois Power Company
(Clinton Power Station)

Facility Licensee Docket No. 50-461

Operating Tests Administered On: January 22-23, 27-31, 1992

During administration of the simulator portion of the operating test, the following observations were made:

Overall the simulator appeared to correctly model all aspects of the selected scenarios and JPMs. There were two problems noted with malfunctions:

1. Whenever a Bailey controller (such as the RCIC turbine speed controller) malfunction is inserted , it affects other Bailey controllers in the simulator.

2. Malfunction [illegible]03 is incorrectly described as an ATWS hydraulic lock. The actual malfunction is electrical and needs a new description.

ENCLOSURE 3

FACILITY COMMENTS AND NRC RESOLUTION

QUESTION: RO No.13/SRO No.16 (1.00)

IDENTIFY the MINIMUM exposure that REQUIRES placing an individual on the Alert List.

This worker will be placed on the Alert List if their:

a. quarterly extremities exposure is 14,000 mrem.

b. quarterly skin exposure is 5630 mrem.

c. quarterly whole body exposure is 900 mrem.

d. yearly whole body exposure is 3250 mrem.

ANSWER: b.

REFERENCE:

CPS 1024.15, "Exposure Control and Routine Exposure Reporting", Pages 9 & 13 of 15.

K/A 294001K104 [3.3/3.6].

FACILITY COMMENT:

The maintenance of the Alert List is a function administratively controlled by the RP department. The safety significance of an operator not knowing when a worker is placed on the Alert List is minimal and confidence in an operator to safely and competently perform his job is neither diminished by knowledge or lack of knowledge in this area. Recommend deleting question.

Reference: NUREG BR-0122, Examiners Handbook, p. 2-22

NRC RESOLUTION:

There were no facility preexam comments on this question.

Accept facility postexam comment, question deleted.

QUESTION: RO No. 15/SRO No. 19 (1.00)

Prior to a startup with the plant less than 200 degrees F, the operator adjusts the Control Rod Drive (CRD) Pressure Control Valve (PCV) to maintain a 250 psid between drive water header pressure and reactor pressure.

How is this pressure differential maintained as reactor pressure increases during the ensuing startup?

As reactor pressure increases during the startup:

a. the operator will periodically adjust the Pressure Control Valve to maintain the required differential pressure.

b. the Flow Control Valve automatically opens to maintain constant flow, therefore a constant d/p across the PCV.

c. the Pressure Control Valve automatically operates to maintain CRD system pressure above reactor pressure.

d. the operator will periodically adjust the Flow Control Valve to maintain CRD system flow/pressure above reactor pressure.

ANSWER: b.

REFERENCE:

LP 85201, "Control Rod Drive Hydraulic", Pages 7 & 8 of 32, L.O. - 1.2.10 and 1.2.11.

K/A 201001K408 [3.1/3.0].

FACILITY COMMENT:

Answer a. From plant experience it is necessary to periodically adjust the pressure control valve during a start up from cold conditions. The CRD flow control valve does not completely compensate.

Answer b. This describes how the system is designed and does work for a limited pressure change.

Recommend accepting both answers a. and b..

Reference: Operating experience.

NRC RESOLUTION:

There were no facility preexam comments on this question. As stated by the facility, and supported by the Control Rod Drive Hydraulic System Lesson Plan, answer b. describes how the system is designed to operate. "Operating experience" is not an adequate reference. During a postexam phone conversation between the Chief Examiner and Training Supervisor, the facility could not provide procedural guidance which addressed adjusting the Pressure Control Valve to maintain drive water header to reactor pressure dP as reactor pressure increases during a startup.

CPS No. 1401.01, Conduct of Operations, Rev. 20, Section 8.4.1.5c), states that written procedures shall be present and referred to during infrequently performed tasks. The associated procedure was not provided as a reference for the exam.

Facility postexam comment not accepted.

QUESTION: RO No. 30/SRO No. 35 (1.00)

IDENTIFY the plant conditions required to allow the Reactor Protection System to be DEENERGIZED.

a. The plant is in Operational Condition 5.

b. All control rods fully inserted and hydraulically disarmed.

c. The plant is in Operational Condition 4.

d. Reactor Engineering determines adequate shutdown margin exists.

ANSWER: c.

REFERENCE:

CPS 3305.01, "Reactor Protective System", Page 4 of 13; LP 87212, "Reactor Protection/Reactor Operator", L.O. - 1.1.

K/A 212000G001 [4.3/4.5]

FACILITY COMMENT:

In the event that RPS is required to be deenergized plant policy requires our operators to refer to procedures to establish required plant conditions. Procedures were not provided as part of this examination. Recommend deleting question.

Reference: CPS 1401.01, "Conduct of Operations".

NRC RESOLUTION:

There were no facility preexam comments on this question. Learning Objective 1.1 on page 1 of Lesson Plan 87212, "Reactor Protection/Reactor Operator", states "Given any operation or manipulation of the RS, state any precautions listed in the RPS operating procedure that would be applicable to that operation or manipulation". Understanding and awareness of major precautions are appropriate, however, expecting an operator to memorize all precautions may not be practical. Although stated as an objective, the postexam comments were contradictory to the training expectations.

Accept facility postexam comment, question deleted.

QUESTION: RO No. 38/SRO No. 43 (1.00)

SELECT the reason why diluting steam is required in the Off-Gas system flow.

The diluting steam in the Off-Gas system:

a. prevents the recombiner from overheating at high reactor power levels.

b. ensures enough oxygen is available for complete recombination with hydrogen in the recombiner.

c. reduces the ignition potential by diluting any hydrogen remaining after recombination.

d. provides the majority of the heat required to force the recombination process to completion.

ANSWER: a.

REFERENCE:

LP 85271, "Off Gas/Basic", Pages 8-B & 9-B, L.O. - 1.8.6 & 1.8.10.

K/A 271000K604 [2.8/2.8].

FACILITY COMMENT:

The primary function of diluting steam is to reduce hydrogen concentration in the offgas stream to less than 4%. The safety significance of an operator not knowing this secondary function of dilution steam is minimal. Confidence in an operator to safely and competently perform his job is neither enhanced or diminished by knowledge or lack of knowledge of this area. Recommend deleting question.

Reference: NUREG BR-0122 Examiners Handbook page 2.22.

NRC RESOLUTION:

There were no facility preexam comments on this question. KA 271000K604 is stated as "Knowledge of the effect that a loss or malfunction of dilution steam will have on the Offgas System". Learning Objective, 1.8.10, is listed on page 2-A of the Instructor's Handbook section in Lesson Plan, LP 85271, Rev. 1, Off Gas/Basic. There are no primary or secondary objectives listed as stated in the facility postexam comment. It is stated as "dilution of hydrogen gas concentration". On page 8-A of the same section, the objective indicates the following information is part of the stated objective: "Carry the noncondensibles through the system. Dilute hydrogen to below 4% Provide superheated steam to the recombiner." On pages 8-B and 9-B of the Student handbook contained in the Lesson Plan, the 1.8.10 objectives that were listed on page 8-A are covered, but also include ". . . Provide superheated steam to the recombiner to enhance the recombination efficiency and act as a coolant to keep the recombiner below the design temperatures while at full reactor power." which contains answer a. of the examination question.

The learning objective was clearly stated on page 2-A, but appears to be inconsistent with the information on page 8-A, and the author's reference, 8-B and 9-B. The facility is encouraged to review the stated objective, verify consistency of the material, and make a determination of whether it clearly reflects expectations of their operators.

Accept facility postexam comment, question deleted.

QUESTION: RO No. 40/SRO No. 45 (1.00)

The reactor is in cold shutdown with loop "A" of RHR in shutdown cooling. Loop "B" is inoperable. A break results in a loss of reactor coolant inventory with water level at -150" and decreasing.

IDENTIFY the operator actions which would be REQUIRED to place loop "A" of RHR in the LPCI injection mode.

a. Close the Shutdown Cooling Suction Valve (F006A), open the Suppression Pool Suction Valve (F004A) and restart the "A" RHR pump.

b. Close the Shutdown Cooling Suction Valve (F006A), open the Suppression Pool Suction Valve (F004A) and open the Shutoff Valve (F042A).

c. Arm and depress the LPCS/LPCI "A" initiation pushbutton.

d. Close the Shutdown Cooling Suction Valve (F006A) and open the Suppression Pool Suction Valve (F004A).

ANSWER: d.

REFERENCE:

LP 85205, "Residual Heat Removal/Basics", Pages 38, 50 & 51 of 52, Rev. 0; L.O. - 1.7.5 & 1.9.10.

K/A 203000A216 [4.4/4.5].

FACILITY COMMENT:

The RHR pump A will trip as the F008 and F009 valves close on the isolation signal as level decreases. The auto initiation signal at L-1 will pick up the SR coil and the breaker will close. The Breaker immediately trips due to the position of the F004A and F006A. The operator has to realign F006A and F004A. To get the pump to restart he must take the control switch to stop to clear the y coil. This act picks up the RHR pump A override circuit. The operator must then take the control switch to start to begin LPCI injection and clear the override. Recommend changing answer to a.

Reference: E02-1RH99, SHEET 007, Rev. K; E02-1RH99, SHEET 528, Rev. F; E02-1RH99, SHEET 009, Rev. D.

NRC RESOLUTION:

There were no facility preexam comments on this question. The reference drawings supplied with the facilities postexam comments support answer a. Lesson Plan 85205, Residual Heat Removal/Basics, Rev. 0, p. 23 of 52, Section C.1.a, states "Regardless of signal origin (automatic or manual) the response of the RHR System is similar. A LPCI initiation signal will supersede and terminate all other modes of RHR Systems operation in effect at the time the signal is received." Additionally, there is no facility procedural guidance that directs operators to manually reestablish a suction path from the Suppression Pool, and restart the RHR pump after a LPCI initiation while in Shutdown Cooling Mode (SDC).

During a telecon with the facility Training Supervisor, the facility stated that a revision is to be made to the Lesson Plan to reflect the SDC mode as the exception to automatic RHR System realignment after receiving a LPCI initiation signal. The facility felt that adequate guidance is provided in the Clinton Technical Specifications concerning LPCI operability during RHR SDC mode of operation.

Accept facility postexam comment, answer a. is correct.

QUESTION: RO No. 45 (1.00)

The Div. II Diesel Generator is running and tied to 4160 volt Bus "1B1" after a LOCA start signal.

SELECT the condition that will cause the diesel generator to trip.

a. High coolant temperature

b. Low lube oil pressure

c. High voltage difference between generator phases

d. Diesel generator overcurrent

ANSWER: c.

REFERENCE:

LP 85264, "Diesel Generator/Diesel Fuel Oil/Basics", Page 22 of 45, L.O.- 1.6.5.

K/A 264000A210 [3.9/4.2].

FACILITY COMMENT:

None of the choices listed will trip the Div II DG during a LOCA condition. During the preexam either item "C" was to be changed to current or "D" was to become overspeed. There appears to have been an error in our comment instructions or during incorporation of the comment. Recommend deleting question.

Reference: CPS Procedure 3506.01 Diesel Generator and Support Systems

NRC RESOLUTION:

The facility preexam comment was to change distractor "d." from "Diesel generator short circuit to ground" to "Diesel generator overcurrent", which was incorporated.

Lesson Plan 85264, Rev.0, p. 22 of 45, states that all trips are bypassed on a LOCA except overspeed and differential voltage. CPS 3506.01, Rev.15, Section 2.1.6, p.4 states that during a LOCA, only overspeed and high generator differential current will trip DGs (1A, 1B, 1C).

Accept facility postexam comment, question deleted.

QUESTION: RO No.48/SRO No. 53 (1.00)

The plant is in shutdown with the Recirculation System secured and the steam separator in place.

SELECT the minimum reactor water level allowed as INDICATED on the shutdown range.

Reactor water level should be maintained above:

a. 44"

b. 61"

c. 66"

d. 70"

ANSWER: c.

REFERENCE:

CPS 3302.01, "Reactor Recirculation", Page 5 of 35;
LP 87202, "Reactor Recirculation/Reactor Operator", L.O. - 1.3.

K/A 205000G001 [3.6/3.7].

FACILITY COMMENT:

The residual heat removal procedure has been revised to remove the 66" requirement and the reactor recirc procedure is being revised to remove it. Recommend changing answer to a.

Reference: CPS 3312.01 "Residual Heat Removal" pages 7 of 81 and 74 of 81; Letter B94-91 (12-02)-6 Shutdown range water level; CPS 3302.01 "Reactor Recirculation" pages 5 of 35 and 19 of 35.

NRC RESOLUTION:

There were no facility preexam comments on this question. CPS 3302.01, Rev. 11 was last revised 11/90; and 3312.01, Rev. 17 was last revised 12/90. Although both procedures originally contained the same directions for using water level indication, only one procedure was revised with the new change.

Accept facility postexam comment, answer a. is correct.

QUESTION: SRO No. 62 (1.00)

The plant has experienced a Station Blackout and Reactor Core Isolation Cooling (RCIC) is running to control RPV water level. The operator is directed to open one Safety Relief Valve (SRV) (F041C preferred) and reduce pressure to between 164 and 195 psig.

SELECT the basis for the use of only one SRV as opposed to the normal method of rotating the use of SRVs for pressure control and reduction.

During a Station Blackout the use of only one SRV:

a. provides the operator with better pressure control to prevent inadvertent RCIC isolation on low pressure.

b. is intended to minimize the impact on the RCIC system due to high lube oil temperatures.

c. will ensure the remaining SRV accumulators have the air available for later use.

d. will localize suppression pool heating until some means of pool cooling is made operable.

ANSWER: b.

REFERENCE:

CPS 4200.01, "Loss of AC Power", Pages 12 & 13 of 30;
LP 87513, "Loss of AC Power", L.O. 1.1.6.

K/A 295003A103 [4.4/4.4].

FACILITY COMMENT:

Answer b is correct per the "Loss of AC Power" procedure CPS 4200.01. Answer c is correct per EOP-1 (4401.01 Rev 20) "RPV control" and the emergency operating procedure basis which states "If instrument air is lost while the SRV's are being used, the valves should be operated in a manner which conserves pneumatic pressure in case a blowdown is later required." During a station blackout instrument air will be lost. Recommend accepting both answers b. and c.

Reference: EOP-1 4401.01 Rev 20; Emergency Operating Procedure Bases section 4 page 57.

NRC RESOLUTION:

There were no facility preexam comments on this question. Emergency Operating Bases were not provided with the reference material.

Accept facility postexam comment, both answers b. and c. are correct.

QUESTION: RO No. 78/SRO No. 72 (1.00)

SELECT the ACTIONS required by CPS 4303.02, "Abnormal Lake Level", with a lake level of 677 feet mean sea level and decreasing.

A lake level of 677 feet requires:

a. monitor entry into CPS 4303.02, "Abnormal Lake Level".

b. an emergency reactor/plant shutdown and cooldown.

c. shutdown of those non-safety related systems depending upon the lake for cooling.

d. sandbagging the Circ Water Pump pits and installation of sump pumps in the pits.

ANSWER: b.

REFERENCE:

CPS 4303.02, "Abnormal Lake Level", Page 2 of 7; LP 85428, "Dam and Lake Outworks System/Basic", L.O. -1.8.2.

K/A 295018G007 [3.2/3.4].

FACILITY COMMENT:

The actions required with a lake level of 677 feet mean sea level are subsequent operator actions. CPS 1401.01 "Conduct of Operations" requires the operator to refer to CPS 4303.02, "Abnormal Lake Level", page 2 of 7. Recommend deleting question.

Reference: Perform actions other than immediate actions, CPS 1401.01, "Conduct of Operations" page 20 of 47.

NRC RESOLUTION:

The preexam comments were to change "677 feet" in the question stem to "679 feet", and change the answer to "a." vice "b." to make this a "procedure entry" question. The exam author originally felt that operator actions of performing an emergency reactor/plant shutdown and cooldown in response to lake level decreasing to 677 feet were Immediate Actions even though the procedure listed them as Subsequent Actions. Additionally, operators should be required to know expected actions at specific "numbers". As Immediate Actions the operator would be required to know them from memory. The preexam comment was not incorporated into the final exam copy.

A postexam review by the exam author took into consideration the time required for lake level to decrease, the fact that the procedure is entered, and lake level monitored continuously, at 679'. At this point the operators would follow the procedure and perform actions as stated in the procedure. The procedure was not provided as a reference for the exam, therefore the facility's postexam comment was accepted and the question deleted from the final exam.

QUESTION: RO No. 79/SRO No. 73 (1.00)

SELECT the parameter requiring entry into EOP-6, "Containment Control":

a. Containment temperature reaches 185 degrees F.

b. Containment pressure cannot be held below 1.6 psig.

c. Drywell temperature reaches 250 degrees F.

d. Drywell pressure cannot be held below 1.6 psig.

ANSWER: a.

REFERENCE:

EOP-6, "Primary Containment Control", Drywell temperature leg; LP 87558, "Primary Containment Control (EOP-6); L.O. 1.05.16m.

K/A 295011G011 [4.0/4.4].

FACILITY COMMENT:

Answer A - Containment temperature of 185 degrees F is greater than the entry condition of 122 degrees F.

Answer C - Drywell temperature of 250 degrees F is greater than the entry condition of 135 degrees F.

Recommend accepting both answers a. and c.

Reference: EOP-6, "Primary Containment Control"

NRC RESOLUTION:

The facility preexam comment of changing from "... EOP-1, RPV Control" to "... EOP-6, Containment Control" was incorporated into the question stem. As a result two entry conditions in the distractors were then correct.

Accept facility postexam comment, both answer a. and c. are correct.

QUESTION: RO No. 81/SRO No. 75 (1.00)

A valid suppression pool dump actuation has occurred. The initiating signals are now clear.

SELECT the actions necessary to close the Division I Suppression Pool Dump Valves (1SM001A and 1SM002A).

The Division I Suppression Pool Dump Valves may be closed:

a. after the "Suppression Pool Dump Valve Mode Selector Div I" is placed in "Disable".

b. after the 25 minute delay timer from the initiation signal has timed out.

c. after the "SM System Div I In Test" switch is placed in the "Test" position.

d. after the "LPCS/LPCI FM RHR A Seal In Reset" pushbutton on P601 is depressed.

. .

ANSWER: d.

REFERENCE:

CPS 3220.01, "Suppression Pool Makeup", Page 8 of 13; LP 87408, "Suppression Pool Makeup/Reactor Operator", L.O.- 1.2.

K/A 295030A104 [4.0/4.0].

FACILITY COMMENT:

Answer d. is the most desirable method of closing the valves and is the method prescribed in the suppression pool makeup procedure. Examination of DC EDL's shows that answer A is also correct. Recommend accepting both answers a and d.

Reference: E02-1SM99, SHEET 001, Rev. J; SHEET 002, Rev. J.

NRC RESOLUTION:

There were no facility preexam comments on this question. Procedure CPS 3220.01, "Suppression Pool Makeup", Rev. 8, Page 8 of 13, step 8.1.5.1.1 directs the operator to depress the LPCS/LPCI FM RHR A Seal In Reset pushbutton on P601 to reset the Division I Suppression Pool Makeup dump signal (answer d.) which allows the Suppression Dump Valves to be closed. Placing the Suppression Pool Dump Valve Mode Selector Div I switch in "Disable" is not listed although a review of the logic drawings does support this method.

Accept facility postexam comment, both answer a. and d. are correct.

QUESTION: SRO No. 83 (1.00)

A procedure step in the temperature control leg of EOP-8, "Secondary Containment Control", directs the operator to isolate systems discharging into the area "except systems needed for fire fighting."

Why are fire fighting systems specifically EXEMPTED from isolation at this time?

a. They will be isolated at the point when their contribution to secondary containment sump levels becomes critical.

b. At this point in the execution of the procedure, fire fighting has a higher priority than temperature control.

c. Isolation of these systems may result in much higher temperatures if a fire is affecting safety related equipment.

d. These systems do not contribute adversely to the conditions being controlled by the Secondary Containment Control EOP.

ANSWER: b.

REFERENCE:

EOP-8, "Secondary Containment Control", Secondary Containment Temperature Control leg; LP 87559, "Secondary Containment Control (EOP-8), Page 20 of 31, L.O. - 1.06.12.

K/A 295032K303 [3.8/3.9].

FACILITY COMMENT:

High area temperatures are indications of fires or breaks into the secondary containment either may jeopardize the operability of equipment. Isolation of Fire Fighting systems may result in higher temperatures and further degradation. Answer c is why answer b is correct. Recommend accepting both answers b and c.

Reference: Emergency Operating Procedures Bases, Section 12, pages 337, 345.

NRC RESOLUTION:

There were no facility preexam comments on this question. The Emergency Operating Procedure Bases document was not part of the reference material.

Accept facility postexam comment, both answer b. and c. are correct.

QUESTION: RO No. 84/SRO No. 78 (1.00)

Following a reactor scram on high Drywell pressure and entry into EOP-1, "RPV Control", an immediate determination must be made regarding continued execution of steps within this EOP.

IDENTIFY criteria directing the operator to exit RPV Control.

a. Nine, or fewer rods withdrawn past 00, and the rods are two, or more, cells apart.

b. The 8 APRM channel "Downscale" lights are illuminated.

c. All rods are inserted to or beyond position 04.

d. The Shift Supervisor determines the reactor will remain shutdown without boron under current plant conditions.

ANSWER: c.

REFERENCE:

EOP-1, "RPV Control", Detail "Y"; LP 87552, "RPV Control (EOP-1)", L.O. - 1.06 & 1.09.10.

K/A 295015G011 [4.2/4.4].

FACILITY COMMENT:

Answer A nine rods withdrawn past 00 exceeds the eight rods specified by detail y.

Answer C position 04 exceeds the position 02 specified by detail y

Recommend accepting both answers a and c.

Reference: EOP-1A "RPV Control", detail "y"

NRC RESOLUTION:

The facility preexam comments were to replace "... exit RPV Control,... " with "... enter ATWS Control..." in the question stem, replace "All rods are inserted to or beyond position 04" with "9 rods are at 04 all others are fully inserted" in answer c., and insert "... under all conditions ..." in distractor d. The changes were inadvertently deleted from the final exam copy.

Accept facility postexam comment, both answer a. and c. are correct.

QUESTION: RO No. 91/SRO No. 90 (1.00)

Drywell and Containment temperatures are below the RPV Saturation Temperature and an RPV level indicator is above the Minimum Usable Level.

IDENTIFY the operational capabilities of that level indicator.

The RPV level indicator:

a. will assure accurate level indication.

b. will provide valid water level trend information.

c. may not be used for any vessel water level indication.

d. provides assurance actual level is below the reference leg tap.

ANSWER: b.

REFERENCE:

LP 87552, "RPV Control (EOP-1)", Page 29 of 69, L.O. - 1.09.16.

K/A 295028K203 [3.6/3.8].

FACILITY COMMENT:

The question does not give bounding conditions of drywell or containment parameters or describe which RPV water level indicators are in question. RPV level indicators are calibrated to provide accurate indications under expected operating conditions and can be used for trending at all times if the indicated level is above the "minimum usable level." Because plant conditions are not narrowly defined answers a or b could be considered correct. Recommend accepting answers a or b.

Reference: Emergency Operating Procedure Bases; section 14, page 373, Detail A, Plant Specific Variables/Limits.

NRC RESOLUTION:

The facility preexam comment was to replace this question because answers a. and b. appeared to be correct. The question inadvertently remained in the final exam copy. However, LP 87552, RPV Control (EOP-1), Rev. 0, page 29 states "... when below RPV Saturation Temperature and above Minimum Useable Level:

a. Assures indicated trend is valid.

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c. Does not assure accuracy ..."

Additionally, EOP Bases document was not provided with the reference materials.

Accept facility postexam comment, both answer a. and b. are correct.

ENCLOSURE 4

REQUALIFICATION PROGRAM EVALUATION REPORT
REQUAL RETAKES FROM JUNE, 1991

Facility: Clinton Power Station

Examiner: M. Bielby, Sr., RIII Chief Examiner

Date of Evaluation: January 22, 1992

Area Evaluated: Simulator

Examination Results:

| | RO Pass/Fail | SRO Pass/Fail | Total Pass/Fail | Evaluation (S or U) |
|---|---|---|---|---|
| Written Examination | N/A | N/A | N/A | N/A |
| Operating Examination | | | | |
| Oral (JPMs) | N/A | N/A | N/A | N/A |
| Simulator | N/A | 2/0 | 2/0 | S |
| Evaluation of facility examination grading: | | | | S |

Crew Examination Results:

| | Crew (Staff) Pass/Fail | Evaluation (S or U) |
|---|---|---|
| Operating Examination | P | S |

Overall Program Evaluation Satisfactory

| Submitted: | Forwarded: | Approved: |
|---|---|---|
| RIII | RIII | RIII |
| MEB | [signature] for MJJ | [signature] |
| Bielby/cg | Jordan | Wright |
| Examiner | Section Chief | Branch Chief |
| 03/24/92 | 03/24/92 | 03/26/92 |